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Springfield Technical Community College



1995 - 1996



Your First Choice



SPRINGFIELD TECHNICAL COMMUNITY COLLEGE

One Armory Square
Springfield, Massachusetts 01105

(413) 781-7822, extension 3855 Day Division
(413) 781-1315 Division of Continuing Education
(413) 781-1317 Center for Business and Technology



Vision Statement

Springfield Technical Community College will be
a world-class, comprehensive educational institution.

Mission Statement

Education contributes to the quality of life and living,
and therefore the College employs the highest standards
in the delivery of its unique and diversified
programs and services to its customers.

The College assists individuals to develop
the capacity for critical thinking;
the ability to communicate effectively;
an appreciation of the arts, sciences, and humanities;
and an understanding of the technological nature
of modern society.

STCC LIBRARY
ONE ARMORY SQ
SPRINGFIELD, MA 01102

TABLE OF CONTENTS

Academic Calendar	4
General Information	7
Admissions Information	14
Minimum Prerequisites for Admission	19
Tuition and Fees	21
Financial Aid	24
Veterans' Information	29
Academic Information	31
Student Information and Services	45
Division of Continuing Education	61
Center for Business and Technology	62
Curricula of the College	63

DEGREE AND CERTIFICATE PROGRAMS

Business	66
Business Administration	67
Accounting	69
Finance	70
Management	70
Small Business Management Option	71
Marketing	72
General Business	73
Transfer Compact Option	74
Accounting Certificate	75
Computer Information Systems	75
Computer Information Systems/Data Processing	76
Microcomputer Specialist Option	77
Data Processing Certificate	78
Microcomputer Specialist Certificate	78
Office Systems	79
Court Reporting	79
Office Administration	84
Executive Office Administration	86
Legal Office Administration	87
Medical Office Administration	89
Word Processing Management	90
Clerical Office Assistant	91
Medical Transcription Certificate	92
Word Processing Certificate	92
Engineering and Science Transfer	94
Biotechnology	95
Engineering and Science Transfer	96
Engineering Transfer Option (Chemical, Civil, Electrical, Environmental, Industrial, Mechanical Engineering)	97
Computer Science Transfer Option	98
Technical Engineering Option	99
Science Transfer Option (Biology, Pre-Medical/Pre-Dental/ Pre-Veterinary, Pre-Pharmacy, Chemistry, Physics/Mathematics)	101
Technical Engineering Certificate	106

Engineering Technologies	107
Automotive Technology	108
Biomedical Instrumentation Technology	109
Civil Engineering Technology	110
Architectural Technology Certificate	112
Computer Systems Engineering Technology	112
Drafting Technology	114
Electrical/Robotics Technology	115
Electrical/Robotics Technology Certificate	116
Electronic Systems Engineering Technology	116
Electronic Systems Technology Certificate	118
Energy Systems Technology	118
Heating/Ventilation/Air Conditioning Certificate	119
Environmental Technology	120
Occupational Health and Safety for Registered	
Nurses Certificate	122
Environmental Technology Certificate	122
Graphic Arts Technology	123
Option: Commercial Art	124
Option: Printing Technology	124
Graphic Arts Technology Certificate	125
Landscape Design and Management Technology	125
Landscape Design and Management Certificate ..	127
Laser Electro-Optics Technology	127
Option: Laser Applications	128
Option: Photonics	129
Option: Optical Fabrication and Testing	129
Mechanical Engineering Technology	129
Option: Computer-Aided Design /Computer-Aided	
Manufacturing	130
Option: Computer-Integrated Manufacturing	131
ComputerAided Drafting Certificate	132
Computer-Aided Manufacturing Certificate	132
Computer-Integrated Manufacturing Certificate	133
Telecommunications Technology	133
Health	135
Health/Human Services	136
Clinical Laboratory Science	137
Cosmetology	139
Cosmetology Management	140
Dental Assistant	141
Dental Hygiene	142
Diagnostic Medical Sonography	144
Medical Assistant	145
Medical Record Coding Specialist Certificate	147
Nuclear Medicine Technology	148
Occupational Therapy Assistant	150
Physical Therapist Assistant	152

Radiation Therapy Technology	154
Radiography	155
Respiratory Care	157
Surgical Technology	159
Nursing	162
Multiskilled Health Care Technician Certificate	164
Multiskilled Mental Health/Mental Retardation Nursing Asst. Cert.	165
Liberal Arts and Sciences	166
Early Childhood Education	167
General Studies	168
Option: University Without Walls	171
Law Enforcement/Criminal Justice	173
Liberal Arts Transfer	174
Option: Fine Arts	176
Option: Education Transfer	177
Option: Arts and Technology - Visual Arts	178
Option: Arts and Technology - Dramatic Arts	179
Option: Arts and Technology - Musical Arts	180
COURSE DESCRIPTIONS	
Course Descriptions by Subject	183
DIRECTORIES	
STCC Board of Trustees	316
Higher Education Coordinating Council	317
Administrative Directory	318
Department Chairs/Program Coordinators	320
Administration, Faculty, and Professional Staff	321
Part-Time Faculty and Professional Staff	334
Clinical Faculty	338
Index of Department Codes	344
Index of Course Subjects	346
Index of Course Numbers	348
Directions to STCC	363
Campus Map	365
General Index	366

ACADEMIC CALENDAR

(The following dates are tentative; these calendars are subject to change without notice.)

WEEK		DATES	FALL SEMESTER 1995
1	Sept. 4 - 8	Mon., Sept. 4 Tues., Sept. 5	LABOR DAY - HOLIDAY Division faculty meetings - 8:30 a.m. Students meet with depts. and advisors
		Tues. - Fri. Sept. 5 - 8 Wed., Sept. 6	LATE REGISTRATION / DROP-ADD 8:00 a.m. - 3:00 p.m.
2	Sept. 11 - 15	Tues., Sept. 12	DAY CLASSES BEGIN GENERAL FACULTY MEETING - 2:00 p.m. Scibelli Hall Theater
3	Sept. 18 - 22		
4	Sept. 25 - 29		
5	Oct. 2 - 6		
6	Oct. 9 - 13	Mon., Oct. 9 Wed., Oct. 11	COLUMBUS DAY - NO CLASSES Classes Follow a <i>Monday</i> Schedule
7	Oct. 16 - 20		
8	Oct. 23 - 27	Fri., Oct. 27	Mid-semester grades due in Registrar's Office - 12:00 Noon
9	Oct. 30 - Nov. 3	Sun., Nov. 5	Phi Theta Kappa Induction Ceremony - 1:00 p.m. Distribution of mid-semester grades and spring 1996 registration booklet to students
10	Nov. 6 - 10	Mon., Nov. 6 Fri., Nov. 10	VETERANS' DAY OBSERVED: NO CLASSES
11	Nov. 13 - 17	Mon., Nov. 13	SPRING, 1996 PRE-REGISTRATION BEGINS Students meet with faculty advisors and complete preregistration
12	Nov. 20 - 24	Tues., Nov. 21 Wed., Nov. 22 Nov. 23 - 24	Last day to preregister for spring, 1996 semester Last day to withdraw from a course without penalty THANKSGIVING RECESS - NO CLASSES
13	Nov. 27 - Dec. 1		
14	Dec. 4 - 8		
15	Dec. 11 - 15	Fri., Dec. 15	Last day of classes
16	Dec. 18 - 22	Mon., Dec. 18 Tues- Fri. Dec. 19 - 22	Reading day
	Dec. 25 - 29	Thurs., Dec. 28	FINAL EXAMS Final grades due in Registrar's Office - 12:00 Noon
	Dec. 23 - Jan. 22		Semester break

WEEK		DATES
	Jan. 15	Mon., Jan. 15
1	Jan. 22 - 26	Mon., Jan. 22
		Mon. - Fri. Jan. 22 - 26
2	Jan. 29 - Feb. 2	Tues., Jan. 23 Tues., Jan. 30
3	Feb. 5 - 9	
4	Feb. 12 - 16	
5	Feb. 19 - 23	Mon., Feb. 19
6	Feb. 26 - Mar. 1	Wed., Feb. 28
7	Mar. 4 - 8	
8	Mar. 11 - 15	Wed., Mar. 13
	Mar. 18-22	Mon. - Fri. Mar. 18 - 22 Mon., Mar. 18
9	Mar. 25 - 29	
10	Apr. 1 - 5	Wed., Apr. 3 Thurs., Apr. 4
11	Apr. 8 - 12	Fri., Apr. 12
12	Apr. 15 - 19	Mon., Apr. 15 Tues., Apr. 16 Fri., Apr. 19
13	Apr. 22 - 26	
14	Apr. 29 - May 3	
15	May 6 - 10	Wed., May 8 Thurs. May 9 Fri., May 10
16	May 13 - 17	Mon. - Thurs. May 13 - 16
	May 20 - 24	Wed., May 22 Thurs., May 23
	May 27 - 31	Mon., May 27 Wed., May 29 Thurs., May 30

SPRING SEMESTER 1996

MARTIN LUTHER KING DAY - HOLIDAY

DIVISION FACULTY MEETINGS - 8:30 a.m.

Students meet with depts. and advisors

LATE REGISTRATION / DROP-ADD

8:00 a.m.- 3:00 p.m.

DAY CLASSES BEGIN

GENERAL FACULTY MEETING - 2:00 p.m.

Scibelli Hall Theater

WASHINGTON'S BIRTHDAY - NO CLASSES CLASSES FOLLOW A *MONDAY* SCHEDULE

Mid-semester grades due in
Registrar's Office -
12:00 Noon

Mid-semester break - NO CLASSES

EVACUATION DAY OBSERVED - HOLIDAY

Distribution of mid-semester grades
and fall, 1996 booklet to students

Fall, 1996 preregistration begins

Students meet with faculty advisors and
complete preregistration

Last day to preregister for fall 1996
semester

PATRIOTS' DAY - NO CLASSES CLASSES FOLLOW A *MONDAY* SCHEDULE

Last day to withdraw from a course
without penalty

Last day of classes

Snow make-up day or reading day

Reading day

FINAL EXAMS

Final grades due in Registrar's
Office - 10:00 a.m.

Sign off on grads by dept. chairs and
div. deans

MEMORIAL DAY - HOLIDAY HONORS CONVOCATION COMMENCEMENT

President's Message



Welcome to Springfield Technical Community College. In the College's 29th year, we are proud to look back on its growth and achievements, as the most comprehensive institution in the Massachusetts community college system. STCC offers 44 different degree or certificate programs and 25 options, to over 7,000 students in Day and Evening divisions. STCC offers computer hardware facilities of university-level quality, and a seven-floor biological sciences building, gymnasium, and theater complex, among its many impressive academic buildings.

The College has a long-standing commitment to provide educational programs of the highest quality. Our major strength lies in our ability to attract faculty and staff committed to the goals and objectives of the College and dedicated to responding to the needs of our students through personalized attention. The College's faculty combine a high degree of theoretical knowledge with practical experience in their field. Our staff are dedicated to making your stay with us a rewarding and enjoyable experience.

This, combined with the diversity of our program offerings, our central location on the beautiful and historic Springfield Armory grounds, and our professional commitment to maintain excellence, combine to make Springfield Technical Community College the finest institution of its kind. An added dimension to enrich your college years are extracurricular activities such as athletics, drama society, and a wide variety of student organizations.

We are prepared to provide you with the educational background and support services so vital in today's fast-paced society.

Once you become part of the STCC family, the relationship does not end when you graduate. As an alumnus, you have ready access to career services, the STCC Library, and the Counseling Center, as well as becoming a member of the STCC Alumni Association. Courses and workshops offered by the Division of Continuing Education and the Center for Business and Technology are designed to help you keep pace with the rapidly-changing skills and knowledge in your field.

We are your community college, and we are here to serve your needs.

Dr. Andrew M. Scibelli,
President

General Information

THE COLLEGE

HISTORY

Springfield Technical Community College is located on the 55-acre Springfield Armory National Historic Site. In 1789, George Washington selected this site on the bluff overlooking the river for the nation's first arsenal; the Springfield Armory was established in 1794 by an Act of Congress. The land had been used as a training field for militia since the 1600s, and by the 1780s was a major ammunition depot. In January of 1787 Daniel Shays led his ill-fated rebellion down the Bay Path, now State Street, attempting to capture the military stores in protest of heavy taxes following the Revolutionary War.

In its 174-year history, Springfield Armory was the center for research, development, and manufacture of most of the small arms that American soldiers depended on, including the legendary Springfield Rifle and the M1 Garand. After World War Two, production decreased, and in 1964 the decision was announced to phase out the Armory.

In that same year, Springfield Technical Institute was established by the City of Springfield on the grounds of the former Trade High School, and was operated jointly by the Springfield School Committee and the Massachusetts Department of Health, Education, and Welfare. The Institute was flooded with more applications than it could handle in a limited space, and the plans to decommission the Armory provided a solution.

In the summer of 1967, STI moved into three buildings on the Armory grounds, and opened in September under the jurisdiction of the Massachusetts Board of Regional Community Colleges. In April, 1968 the Armory was officially closed, and in August of that year, the Institute's name was changed to Springfield Technical Community College.

An initial enrollment of 400 students and a faculty of 20 began what is now one of the largest and most comprehensive community colleges in the Commonwealth, serving an increasingly diverse population. Over the last quarter century and more, the open-door policy of the College has provided opportunity for education to adult learners, growing minority populations, veterans, international students, single parents, employees needing retraining, the disabled, disadvantaged, and senior citizens wishing to continue their education, as well as the traditional college student, the recent high school graduate.

Today, the grounds are shared by the federal and the state government. The 20 acres under the jurisdiction of the National Park Service contain the Armory Museum and the former commanding officer's quarters, now NPS administrative offices. The remaining 35 acres comprise the campus of STCC, a combination of old brick buildings, the oldest dating to 1808, and new modern structures of classrooms and labs. Facilities for the humanities, business, nursing, health and human services, engineering, and engineering technologies are surrounded by a distinctive iron fence cast in the mid-1800s from old cannon.

Scibelli Hall, our newest facility, accommodates the following: administrative computer center, athletics, biological sciences, business administration, cafeteria,

computer information systems, conference center, exercise room, 250-seat auditorium, gymnasium, office administration department, student computer labs, and telecommunications technology.

Springfield Technical Community College is continuing the Springfield Armory's tradition of excellence. The Armory had a lasting impact on industrial progress in the areas of irregularly-shaped parts, quality control, and assembly line production. Today, STCC students working with lasers and computer integrated manufacturing, meet the challenges of an increasingly complex world.

GOVERNANCE

In 1947 the Massachusetts Board of Education determined that the Commonwealth should establish a system of community colleges, and in 1958, the Massachusetts Board of Regional Community Colleges was created to oversee the master plan for the development of this system. There are now 15 Massachusetts community colleges, of which STCC was the 12th one established.

On March 1, 1981, the Massachusetts Board of Regents of Higher Education assumed responsibility for all the Commonwealth's public institutions of higher education. On September 1, 1991, the Higher Education Coordinating Council was created to replace the Board of Regents. For a listing of the Council members, see page 317.

On March 1, 1981, the Springfield Technical Community College Board of Trustees was created, replacing the STCC Advisory Board. Together with the Higher Education Coordinating Council, the Board is the governing body of the College. The eleven-person Board of Trustees includes one member representing the alumni of the College, and one student member elected each year by the student body. For a listing of Trustees, see page 316.

MISSION

Springfield Technical Community College is the only co-educational, public, technical community college in the Commonwealth. It is dedicated to the community college concept: an open-door policy for a diverse population; quality education at low cost; and excellence in teaching. Furthermore, STCC, as a community college, is responsive to the community's need for technical and career programs in business, computer science, computer information systems, engineering, health/human services, nursing, and technologies, as well as for university parallel courses on the freshman and sophomore levels for students who transfer to senior institutions. With its unique and diversified array of programs in high technology and health sciences, the College serves as the Western Massachusetts Technology Education and Technology Transfer Center. Building on its principal mission of offering associate degree education, the College plans to provide baccalaureate programs in Engineering Technology and Medical Health Sciences. Finally, Springfield Technical Community College serves as a center for the cultural and civic life of the community.

PHILOSOPHY

Springfield Technical Community College strives to meet the changing needs of the community through the commitment of its faculty, administration, staff, trustees, and students. We believe that the College must assist students in their choice and

preparation for careers; encourage performance to meet the highest professional standards, and provide opportunities for continuing educational and professional enrichment. At the same time, the College strives to develop and foster an understanding of scholarship through the liberal arts and sciences.

Education contributes to the quality of life and living. It is accomplished through efforts to develop in students the capacity for critical thinking, the ability to communicate effectively; an appreciation of the arts, sciences, and humanities; and an understanding of the technological basis of modern society. The College recognizes the need for students to deal with the rapid pace of change and such global concerns as those related to environment, population, and international relations.

Springfield Technical Community College aims to assist in the development of people who are educated in mind, sensitive to ethical concerns, responsive to civic and social obligations, capable of adjusting to change, and able to respond creatively to the demand of their chosen careers.

GOALS

Based on its mission statement and philosophy, the goals of Springfield Technical Community College have been defined as follows:

1. To make high quality, low cost, higher education available to all, with emphasis on minorities, on the economically or educationally disadvantaged, particularly those whose previous exposure to the educational process has been unproductive, and on women returning to the work force and on adults who must embark on a new career or upgrade an old one;
2. To anticipate and meet the needs of the community, the Commonwealth of Massachusetts, and the nation for competent and educated workers in Business, Computer Science, Computer Information Systems, Engineering, Health/Human Services, Nursing and Technologies by offering associate degree education programs in these disciplines and by providing baccalaureate programs in Engineering Technology and Medical Health Sciences;
3. To provide technical courses for students who wish to gain competence in specific careers and for employed workers who wish to upgrade their skills or move into another level/field of employment;
4. To provide university parallel courses of high academic quality on the freshman and sophomore levels for students who will transfer to senior institutions;
5. To prepare students for effective personal and community living by including in degree programs academic and cultural courses outside the area of their career;
6. To provide credit and non-credit courses for continuing education on a full- or part-time basis and a program of community service activities;
7. To maintain the highest possible educational standards in all programs;
8. To provide opportunities for developmental study which will improve skills and attitudes so that success in a program may become possible;
9. To provide students with guidance, counseling, health services, financial aid, quality student life, intercollegiate sports, student needs under the Americans With Disabilities Act of 1992, and other services not included in academic programs;

10. To ensure a faculty commitment to excellence in teaching;
11. To remain committed to the affirmative action plan of the College;
12. To serve as a center for the cultural and civic life of the community;
13. To provide measures of institutional effectiveness which ensure appropriate assessment and evaluation of college programs, services, and student achievement;
14. To maintain a physical plant which will facilitate the accomplishments of the goals of the College, and to honor the College's entrustment with a portion of the Springfield Armory National Historic Site by providing maintenance, historic preservation, and accessibility of that site to citizens of the Commonwealth and the nation.

ACCREDITATION

Springfield Technical Community College is accredited by the New England Association of Schools and Colleges, Inc., a non-governmental, nationally recognized organization whose affiliated institutions include elementary schools through collegiate institutions offering post-graduate education.

Accreditation of an institution by the New England Association indicates that it meets or exceeds criteria for the assessment of institutional quality periodically applied through a peer group review process. An accredited school or college is one which has available the necessary resources to achieve its stated purposes through appropriate educational programs, is substantially doing so, and gives reasonable evidence that it will continue to do so in the foreseeable future. Institutional integrity is also addressed through accreditation.

Accreditation by the New England Association is not partial, but applies to the institution as a whole. As such, it is not a guarantee of the quality of every course or program offered, or the competence of individual graduates. Rather, it provides reasonable assurance about the quality of opportunities available to students who attend the institution.

Inquiries regarding the status of an institution's accreditation by the New England Association should be directed to the administrative staff of the school or college. Individuals may also contact the Association:

Commission on Higher Education
New England Association of Schools and Colleges
The Sanborn House, 15 High Street
Winchester, Massachusetts 01890
(617) 729-6762

The College is approved by the Board of Collegiate Authority, Massachusetts Department of Education; by the Massachusetts Rehabilitation Commission; by the United States Office of Education for listing in the Directory of Higher Education; for the National Defense Student Loan Program; for federal assistance from any unit of the Department of Health, Education, and Welfare; by the United States Veterans Administration for the admission of veterans and war orphans; by the United States Department of Justice as a place of study for non-immigrant students; and by the United States Internal Revenue Service as a non-profit organization.

Individual programs in the Health/Human Services Division are accredited as follows:

Clinical Laboratory Science	
National Accrediting Agency for Clinical Laboratory Sciences (NAACLS)	5/94 to 5/2000
Dental Assistant	
American Dental Association Commission on Dental Accreditation	12/90 to 12/97
Dental Hygiene	
American Dental Association Commission on Dental Accreditation	12/90 to 12/97
Diagnostic Medical Sonography	
Joint Review Committee on Education in Diagnostic Medical Sonography (JRCDSMS)	
Human Services Associate	
Council for Standards in Human Services Education	10/93 to 10/98
Medical Assistant	
The American Association of Medical Assistants' Endowment Commission on Accreditation of Allied Health Education Programs (CAAHEP)	10/90 to 10/97
Nuclear Medicine Technology	
Joint Review Committee on Educational Programs in Nuclear Medicine Technology (JRCNMT)	9/93 to 9/98
Occupational Therapy Assistant	
The Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA)	
Physical Therapist Assistant	
Commission on Accreditation in Physical Therapy Education of the American Physical Therapy Association (APTA/CAPTE)	10/89 to 10/97
Radiation Therapy Technology	
Joint Review Committee on Education in Radiologic Technology (JRCERT)	2/91 to 2/96
United States Department of Education	
Radiography	
Joint Review Committee on Education in Radiologic Technology (JRCERT)	Reaccreditation in progress
United States Department of Education	
Respiratory Care	
Joint Review Committee for Respiratory Therapy Education (JRCRTE)	10/92 to 10/96
Commission on Accreditation of Allied Health Education Programs (CAAHEP)	
Surgical Technology	
Accreditation Review Committee on Education in Surgical Technology (ARC-ST)	4/95 to 2000
Commission on Accreditation of Allied Health Education Programs (CAAHEP)	

COOPERATING COLLEGES OF GREATER SPRINGFIELD

The Cooperating Colleges of Greater Springfield, Inc. is an educational consortium composed of the eight public and private colleges in the Greater Springfield area: American International College, Bay Path College, Elms College, Holyoke Community College, Springfield College, Springfield Technical Community College, Western New England College, and Westfield State College. Founded in 1971, the organization fosters the sharing of programs, talents, and facilities, to bring to this area the educational resources of a university while retaining the initiative and vitality of independent institutions.

Through cooperative planning at the presidential level and the functioning of committees from different administrative levels, CCGS aims:

- to enrich the educational offerings, cultural events, and social activities of the colleges,
- to offer a wide variety of programs and fields of study to students at each institution,
- to effect fiscal economies and to eliminate unnecessary duplication through joint planning, and
- to develop into an economic and educational resource to the Greater Springfield community.

Examples of the different levels on which the colleges meet and cooperate are committees composed of the presidents, the deans of faculty, the deans of students, the librarians, the public relations directors, and the student activities directors, among others.

I. Presidents

The presidents speak with a united voice for higher education in the Greater Springfield area through their monthly meetings, and support area-wide projects for community development, through such organizations as the Education Opportunity Center and the Chamber of Commerce.

II. Academic Exchange

Cross registration has been established so that in each semester or term, any CCGS student attempting at least six semester hours in a degree program in the day division may enroll at another college for any regular-term course that is not offered at his or her own institution, as long as the desired course is not over-subscribed. No payment of additional tuition is required. Study at the host institution is scheduled as part of the student's normal credit load, and all records for such academic achievement are kept by the registrar of the student's home college. This cross-registration includes an Army ROTC program, and an Air Force ROTC program. For more information on the Army ROTC program, call Western New England College at 782-1332; for information on the Air Force ROTC program, call the University of Massachusetts at 545-2451. The academic deans also sponsor faculty development conferences with nationally-prominent speakers.

III. Libraries

All students and faculty of CCGS colleges have immediate access to the full library collections of all eight colleges, numbering 1,174,420 volumes at last count, thus greatly expanding the opportunities for independent study and research. The Cooperating Libraries of Greater Springfield (part of CCGS) also include the

Springfield City Library, the Western New England Law School Library, and the Baystate Medical Center Library. The CLGS librarians have compiled a union list of serials, listing periodicals available in all libraries. A valid STCC I.D. is required in order to borrow materials from any CLGS library. For further information, please see the section in this catalog on The Library (page 51).

IV. Student Activities

The Student Activities directors meet to discuss jointly sponsored educational, cultural, and social programs. The member colleges open some of their extracurricular events to all CCGS students. Events scheduled at individual institutions may be publicized among the member colleges; in this way, programs which a single institution might not be able to attract are made available.

STCC FOUNDATION

The Springfield Technical Community College Foundation is a not-for-profit corporation which is fiscally and organizationally separate from the College. Funds received by the Foundation are used to advance STCC and to encourage and support its students and programs. The Foundation's objectives include raising funds from private sources to provide scholarships and other kinds of support services for which funds are needed.

The Anthony M. Scibelli and the Joseph J. Deliso Endowed Chairs are presented annually by the STCC Foundation Board to recognize and foster faculty excellence. The award is distributed as one-half cash award to further professional pursuits and one-half in grant for the recipient's department.

STATEMENT ON RACIAL, ETHNIC, AND RELIGIOUS HATRED

The All-College Council of Springfield Technical Community College condemns any deliberate action which promotes racial, ethnic, or religious hatred. We believe that such hatred undermines the goals of education and efforts to build a more just and humane society.

POLICY IN SUPPORT OF PLURALISM

Students, faculty, staff, and visitors must be free from conduct that has the purpose or effect of interfering with an individual's academic or professional performance and creating an intimidating, hostile, or demeaning educational or employment environment. As such, the College has a policy of unequivocal condemnation of ethnic, religious, cultural, or racial intolerance, whether it be based on any of the aforementioned, handicap status, sex or sexual orientation.

POLICY CONCERNING SEXUAL HARASSMENT

Sexual harassment is a form of sex discrimination. Sexual harassment of a student, an employee, or any other person in the College community is unacceptable, impermissible, and intolerable, not only because it is against the law, but because it is contrary to the mission of the College.

Further information or questions on either of the above College policies should be directed to the Affirmative Action Officer of STCC.

Admissions Information

ADMISSION

Springfield Technical Community College encourages applications without regard to race, color, national origin, age, gender, religion, disability, or sexual orientation. Admission to the College requires a high school diploma or its equivalent. A student who does not have a high school diploma or equivalent may be admitted only with non-degree status, and will be ineligible for financial aid.

Every consideration will be given to any applicant who possesses a diploma without regard to the curriculum pursued in high school. The applicant should take note, however, of the numerous requirements demanded by specialized college programs (see Prerequisite page).

A high school equivalency diploma (General Education Development Test-GED) may be earned by passing tests administered by the College several times each year. Further information about the tests may be obtained from the Testing and Assessment Center, 781-7822, extension 3374.

Students are advised to carefully study special requirements that are established by the program into which they seek admission.

Some programs of the College require specific minimum scores to be achieved by the applicant on the Scholastic Aptitude Test (SAT) of the College Entrance Examination Board. The Admissions telephone number is: 781-7822, extension 3855.

APPLICATION PROCEDURE

Students desiring admission to the College may obtain an application by writing to the Admissions Office, Springfield Technical Community College, One Armory Square, Springfield, MA 01105. Students attending high schools in the Greater Springfield area may expedite the application process by asking their guidance departments for an application form. Applications should be filled out completely and returned to the STCC Cashier's Office as soon as possible. This application must be accompanied by a non-refundable application fee in the amount of \$10 for in-state students or \$35 for all out-of-state or foreign students in check or money order payable to STCC. This is a required fee which goes directly into the General Fund of the Commonwealth. It is each applicant's responsibility to insure that a transcript of his/her high school grades is sent to the STCC Admissions Office. The Admissions Office cannot accept the responsibility for obtaining transcripts. Any student who has been absent from STCC for seven years or more must re-submit transcripts and other credentials deemed essential by the Admissions Office.

Springfield Technical Community College maintains an open-door admission policy. However, the rapidly increasing number of applicants and the requirements of competitive programs necessitate early application for admission. Applicants should have their applications on file as early as possible, preferably before January 31 for the subsequent academic year. Applications received after January will be processed, and acceptance to desired programs will be based on available space.

In addition, transcripts from all colleges previously attended must be submitted to the College. Applications cannot be processed until all transcripts are received.

APPOINTMENTS FOR INTERVIEWS

Although interviews are not required, applicants are encouraged to seek help with career choices by exploring various programs with the counselors and staff. Interviews and tours may be arranged by phoning or by writing the Admissions Office for an appointment; telephone 781-7822, extension 3855.

OUT-OF-STATE AND INTERNATIONAL STUDENT INFORMATION

Because of the lengthened processing time, out-of-state residents, as well as all non-United States residents, must have all application materials complete and on file with the STCC Admissions Office prior to August 1 in order to be considered for admission to the fall semester (December 1 for admission to the spring semester).

Prospective students who are neither United States citizens nor in the United States on permanent visas must have taken the Test of English as a Foreign Language (if English is not the primary language spoken in their country) and have the test score entered as a part of their application for admission. Those who score below 525 on the TOEFL may enroll only for classes entitled English as a Second Language (ESL). Students applying for ESL courses only, are not required to take the TOEFL.

PLACEMENT TESTING

As part of the admission process at STCC, incoming students are required to take English, mathematics, and reading placement examinations. Results of the placement tests are used to advise and schedule students into appropriate courses. Placement testing is required before registering for classes. No credit is awarded on the basis of placement examinations.

Placement examination exemptions may apply to:

1. Students transferring equivalent college-level coursework into STCC from an accredited post-secondary institution; course transfer requires a grade of "C" or better.
2. English as a Second Language program students who will continue to participate in appropriate ESL assessments.
3. Students having valid mathematics, English writing, and reading examination scores on STCC placement tests which are two years old or less.
4. Students who have satisfactorily completed coursework in English and mathematics at STCC. When necessary, courses completed and grades earned will be jointly evaluated by the Admissions Office and the appropriate academic department.

If a student who has been accepted into a degree or certificate program scores below college level on the STCC placement tests, he or she must enroll in developmental courses. This will usually lengthen the time necessary to complete the desired program.

Placement examinations are administered by the Testing and Assessment Center located in Building 17, Room 425. Questions should be directed to the Admissions Office or the Assessment Center. Only the Admissions Office can grant exemptions for placement testing.

IMMUNIZATION LAW

Chapter 76, section 15C of the General Laws of the Commonwealth of Massachusetts requires that ALL COLLEGE STUDENTS TAKING 12 CREDITS OR MORE AND BORN IN 1957 OR LATER, AND ALL STUDENTS IN A HEALTH FIELD must present a medical certificate indicating that they are immune to measles, mumps, rubella, tetanus, and diphtheria in order to register for classes.

Any combination of three or more doses of DPT, DT, Td, is acceptable provided the last dose was administered within ten years. If not previously immunized, three doses are required. The time interval between the first and second doses is two months, with a third dose a year later.

Measles/Mumps/Rubella (MMR) vaccine is required if immunity is lacking for any one of these diseases. If vaccine is not given, TITRE must be done to prove immunity. Documented proof of MMR must be after January 1, 1966 for Massachusetts students, and after January 1, 1968 for non-Massachusetts students. Having had rubella, measles, or mumps disease does not prove immunity. It is required that all entering college students born after 1956 should have TWO doses of live measles vaccine or a repeat MMR, the first dose being after 12 months of age.

All students in the Health/Human Services division, Nursing, and Biomedical Instrumentation Technology must either be immunized against Hepatitis B, show proof of Immune Titre, or have a signed Informed Hepatitis B Immunization Declination Form.

In addition, students in Health/Human Service, Nursing, and Early Childhood Education are required to submit documentation of a current Tuberculin Mantoux test. NOTE: If Mantoux test is (or has been) positive, a chest x-ray is required.

TECHNICAL STANDARDS

Each program in the Health/Human Services Division and the Nursing Division has set forth specific technical standards which are required in the profession and are necessary in order to affiliate in the clinical agencies and ultimately practice in the profession. It should be noted that under the Americans With Disabilities Act, "A qualified person with a disability is one who can perform the essential function of a job with or without reasonable accommodation."

The technical standards are not conditions of admission to a program of study. They reflect performance abilities that are necessary for a student to successfully complete the requirements of specified programs.

Each department in the Engineering Technologies Division has also produced a list of technical standards required to function within that profession.

Prior to enrollment within these departments, each student will be required to sign and return a form indicating that he or she has read and understands the technical standards established for the specific program in which he or she is enrolling.

TRANSFER INTO STCC

Applicants who have had previous college experience must submit all college transcripts whether or not they are seeking transfer credit. In order to meet the residency requirements, a minimum of 15 credits required in the degree program must be taken at STCC to receive a degree. The remainder may be taken at other institutions. Only courses in which the student has received a "C" grade or better and which are similar in content to those required in the student's program at STCC will be accepted. Transfer applications are usually accepted for admission to the College in both September and January; however, the number of programs open for admission in January is limited. Please contact the Admissions Office for more information.

DEPARTMENT/PROGRAM CHANGES

Students wishing to change their program or department should do so only after considerable thought and counsel. To initiate a program change, students must obtain an Intra-College Transfer application from the Admissions Office.

Consultation with the faculty advisor, an admissions counselor, or the career counselor is recommended to ensure that prerequisites for admission to the new program have been satisfied, before submitting the application to the Admissions Office. The application should be submitted to Admissions no later than December 31 for the following fall term. Applications are reviewed by Admissions, and notifications of decisions mailed to students.

RE-ADMISSION

Any student who has been dismissed for academic deficiencies may be readmitted by bringing his cumulative quality point average (CQPA) up to the minimum standard required by the College (See Academic Standing). Any student who has attended summer or evening school and has raised his CQPA to the acceptable level, must complete an incoming student application.

FRESH START STATUS

Students returning to STCC after a separation of at least two years will be eligible to apply for Fresh Start Status. A student who applies for the Fresh Start option will have his or her previous academic record treated as if it were the record of a transfer student, thereby allowing the student to begin a new quality point average. Therefore, all prior STCC credit which meets both degree and grade requirements of the student's current program will be changed to a grade of "P".

CLEP AND CHALLENGE EXAMINATIONS—ADVANCED PLACEMENT

The College may award up to 45 credits to persons who successfully complete examinations in specific subject areas given at the College under the aegis of the College Level Examination Program (CLEP), or a series of Challenge Exams developed by the College.

The CLEP subject examinations cover a wide range of disciplines and allow applicants to demonstrate proficiency in areas where they have acquired knowledge through non-traditional learning situations. Credits earned through CLEP

examinations allow the College to waive introductory courses which the student would normally be required to take.

The College has produced challenge examinations in subject-matter areas not found in the CLEP battery so that people who wish to demonstrate competence in specialized areas may do so. Students who feel that they possess above average competence in a subject area should not hesitate to consult the STCC Testing Coordinator at extension 3374 for further information, consultation and testing. CLEP and Challenge credits cannot be used to replace or improve a grade already on a student's transcript.

High scores on the Advanced Placement Examination of the College Entrance Examination Board will be evaluated by Admissions. Specific scores as approved by the College may allow the student applicant to be exempted from certain courses.

COMMUNITY CONNECTIONS

2 + 2 ARTICULATION/TECH PREP PROGRAM

Students from a number of local school systems, including Springfield, Chicopee, Pathfinder Regional and several others, may be able to receive college credit for some of their high school courses, under terms of 2+2 articulation agreements.

STCC is also a member of Tech Prep West, a consortium of community colleges and 19 secondary schools in the region. Through this program, high school students can begin taking Tech Prep courses in math, science, and English in their junior year that will specifically prepare them for a smooth transition into over 15 associate degree career programs at STCC.

For more information about both programs, call the 2+2/Tech Prep office at 781-7822, extension 3160.

DUAL ENROLLMENT

The Education Reform Act of 1993 authorized the Dual Enrollment program, which allows Massachusetts public high school students to take college courses and receive college credits. Individual high schools will determine if high school credit can be given for courses taken.

The Commonwealth of Massachusetts will reimburse public colleges/universities at a designated rate for tuition and fees of the participating high school students. Students must purchase their own text books and study materials, and must provide their own transportation. High school personnel must submit a written request to the Executive Office of Education for the encumbrment of funds. EOE will notify the high school in writing of the availability of funds within ten working days of receipt of the request.

Massachusetts public high school students in their junior or senior year who have a GPA of 3.0 or better and/or are approved by the high school guidance director or principal are eligible to apply. Parents/guardians must also approve the student's participation. Applications are available in the STCC Admissions Office or the high school guidance office.

PIONEER VALLEY A.H.E.C.

The Area Health Education Center (AHEC) of the Pioneer Valley, an affiliate of STCC, is located in Garvey Hall South. Developed at the federal level, the Pioneer Valley AHEC is now primarily funded by the Massachusetts Higher Education Coordinating Council. The organization is one of six AHECs in the commonwealth of Massachusetts, and serves Hampden, Hampshire, and Franklin counties.

The Pioneer Valley AHEC serves two major functions: developing and implementing health promotion training/service programs, and recruiting students of color into health professions. Health promotion training/service programs are established through a network of area colleges and universities, as well as community agencies. The programs, which are funded by the Pioneer Valley AHEC, generally involve the placement of health professions students in community-based agencies for part of their training. The students provide various health services, so that health training and service needs are matched.

The objective of recruiting students from communities of color is achieved through three REACH (Recruitment and Educational Assistance for Careers in Health) programs and one tobacco peer education program located in Holyoke and Springfield. The Springfield programs are located at STCC, in Garvey Hall. The Holyoke program is located at the Dr. Marcella Kelly School. Student enrollment begins as early as sixth grade and culminates in paid work placements in health care facilities beginning in eleventh grade. All three programs provide students of color with the infrastructure to ensure a successful outcome in post-secondary educational institutions. Student programmatic experiences include academic tutoring, field trips, and interactive educational sessions.

Minimum Prerequisites for Admission

Program	Math	Science	Other Academic Area	Additional Requirement	Degree or Certificate Awarded	License or Affiliation Possible
Automotive Technology	Algebra 2	Physical			Degree	
Biomedical Instrumen.	Algebra 2	Physical			Degree	
Biotechnology	Alg. 2 & Trig., Geometry	Bio., Chem., Physics***		SAT 1	Degree	
Business Administration						
Accounting	Algebra 2*				Degree	
Finance	Algebra 2*				Degree	
Management	Algebra 2*				Degree	
Option: Small Bus. Mgt.	Algebra 2*				Degree	
Marketing	Algebra 2*				Degree	
General Business	Algebra 2*				Degree	
Option: Trans. Comp.	Algebra 2*				Degree	
Civil Engineering Tech.	Algebra 2	Physical			Degree	
Clinical Lab. Science	Algebra 2	Bio. & Chem.***		SAT 1	Degree	Nat'l. registration
Computer Information Systems	Algebra 2*				Degree	
Option: Micro. Spec.	Algebra 2*				Degree	
Computer Sys. Eng. Tech.	Algebra 2	Physical			Degree	
Cosmetology					Certificate	State license
Cosmetology Mgmt.				State license	Degree	
Court Reporting			Typing 60 WPM**	SAT 1*	Degree	NSRA, CSP/RPR/CM
Dental Assistant		Biology***	Typing	SAT 1*	Certificate	ADAA Natl. Cert.

Program	Math	Science	Other Academic Area	Additional Requirement	Degree or Certificate Awarded	License or Affiliation Possible
Dental Hygiene	Algebra 1, Geometry or Algebra 2	Biology & Chemistry***		SAT 1	Degree	ADAA Nat'l. Bd. NE Regional Bd. State license
Diagnostic Med. Son.	Algebra 2	Bio. & Chem.***		SAT 1	Degree	Nat'l. certificate
Drafting Technology	Algebra 1	Physical			Certificate	
Early Childhood Educ.	Algebra 2				Degree	Nat'l. credential Child Dev. Assoc.
Electrical/Robotics Tech.	Algebra 2	Physical			Degree	
Electronic Sys. Eng. Tech.	Algebra 2	Physical			Degree	
Energy Systems Tech.	Algebra 2	Physical*			Degree	Certificate 2nd class license
Eng. & Science Transfer	Alg. 2 & Trig.	Chem. & Physics		SAT 1	Degree	
Option: Comp. Sci. Tran.	Alg. 2 & Trig.	Chem. & Physics		SAT 1	Degree	
Option: Science Trans.	Alg. 2 & Trig.	Chem. & Physics		SAT 1	Degree	
Environmental Tech.	Algebra 1	Chemistry*			Degree	Certification
General Studies					Degree	
Graphic Arts Technology						
Option: Commer. Art	Algebra 1	Physical			Degree	
Option: Printing Tech.	Algebra 1	Physical			Degree	
Landscape Design & Mgmt. Tech.	Algebra 1	Physical			Degree	
Laser Electro-Optics Tech.						
Option: Laser Appl.	Alg. 2 & Trig.	Physical			Degree	
Option: Photonics	Alg. 2 & Trig.	Physical			Degree	
Option: Opt. Fab. & Test.	Alg. 2 & Trig.	Physical			Degree	
Law Enforce/Crim. Jus.					Degree	
Liberal Arts Transfer	Algebra 2*				Degree	
Option: Educ. Trans.	Algebra 2*				Degree	
Option: Visual Arts	Algebra 2*				Degree	
Option: Dramatic Arts	Algebra 2*				Degree	
Option: Musical Arts	Algebra 2*				Degree	
Mechanical Eng. Tech.						
Option: CIM	Algebra 2	Physical			Degree	
Option CAD/CAM	Algebra 2	Physical	Mech. Drawing		Degree	
Medical Assistant					Degree	Nat'l. certificate
Nuclear Medicine Tech.	Algebra 2	Bio. & Chem.***		SAT 1	Degree	2 Nat'l. cert.
Nursing	Algebra 2	Bio. & Chem.***		SAT 1	Degree	R.N.
Occup. Ther. Asst.	Algebra 2	Bio. & Chem.***		SAT 1	Degree	Nat'l. certificate
Physical Ther. Asst.	Algebra 2	Bio. & Chem.***		SAT 1	Degree	
Radiation Therapy Tech.	Algebra 2	Bio. & Chem.***		SAT 1	Degree	Nat'l. certificate
Radiography	Algebra 2	Bio. & Chem.***		SAT 1	Degree	Nat'l. certificate
Respiratory Care	Algebra 2	Bio. & Chem.***			Degree	
Surgical Technology		Bio. & Chem.***			Degree	Nat'l. certificate
Office Administration						
Clerical Office Asst.					Certificate	
Executive Off. Admin.					Degree	NSA, IWP, CIS, CPS
Legal Off. Admin.					Degree	NSA, IWP, CIS, CPS Exam, PLS Exam
Medical Off. Admin.					Degree	NSA, IWP, CIS, CPS
Word Process. Mgmt.					Degree	IWP, NOMA, AMA
Telecommunications Tech.					Degree	

* Not mandatory but recommended

** This requirement may be fulfilled by successful completion of a typing test prior to enrollment

*** This requirement must include labs

Note: The physical science requirement may be filled by a course such as physics, chemistry, earth science, astronomy, oceanography, or similar.

Information as of June, 1995.

Tuition and Fees

TUITION

The Commonwealth of Massachusetts has set tuition at \$40 per credit for Massachusetts residents and \$188 per credit for non-residents. Under an agreement among the New England States, students from any of the six states may attend college in another of the six states for \$60 per credit, provided that the program desired is not available in their state or that the community college is closer than that in the home state.

Tuition and fees listed above are those as of June, 1995, and are subject to change without further notice.

PAYMENT OF BILLS

All tuition and fees are payable before each semester begins. If payment is to be made by agencies or scholarship programs, arrangements must be made in advance with the Business Office. All student financial obligations must be satisfied before a student is considered properly registered. No grades, transcripts, recommendations, degrees or other services will be provided to students with outstanding financial obligations.

GENERAL EDUCATION FEE

The General Education Fee replaces several other fees that were in existence in prior years. The fee is charged on a per credit basis, and the revenue is used to support the College's health services, library, graduation services, and academic programs as well as general College operations and services.

CAPITAL IMPROVEMENT FEE

It is the College's intention to negotiate a loan to finance a capital project. If this project materializes, a per credit fee will be charged to each student to finance the repayment of this loan. The fee will be waived by the College until such time that the capital project is initiated.

HEALTH INSURANCE

The Commonwealth of Massachusetts, effective September 1, 1989, requires each student carrying nine credits or more to participate in the student health insurance program. The annual premium is \$336. If a student has comparable coverage and wishes to waive participation in the Massachusetts Community College insurance plan, the student must complete a written waiver form showing comparable coverage.

SENIOR CITIZEN TUITION EXEMPTION

There shall be no charge for tuition to any Massachusetts resident 60 years of age or over for attending Springfield Technical Community College provided that the College is not over-enrolled. However, certain fees may still be charged. This tuition exemption policy also applies to evening, weekend, and summer courses offered through the Division of Continuing Education, which requires that all fees

be paid at the time of registration. Students wishing to take advantage of this tuition waiver will be required to provide documentation (such as a driver's license) showing proof of age and residence in Massachusetts.

DETERMINATION OF RESIDENT STATUS

An in-state student is defined as an American citizen or a permanent resident alien who has resided in Massachusetts for purposes other than attending an educational institution for at least six months immediately preceding the student's entry or re-entry as a student.

A number of factors will be considered to determine the intention of an individual to maintain permanent residence in Massachusetts. No single factor will be considered decisive. Each case will be decided on the basis of all facts submitted by the student. The burden of proof rests with the student seeking in-state classification. The following indicators shall be considered in determination of resident status.

- 1.) copies of federal and state income tax forms
- 2.) documentation of Massachusetts voter registration
- 3.) copies of valid Massachusetts drivers license and automobile registration
- 4.) permanent employment in a position not normally filled by a student
- 5.) continuous physical presence in Massachusetts during periods when not an enrolled student
- 6.) former residency in Massachusetts and maintenance of significant connections there while absent
- 7.) all other materials of whatever kind or source which may have a bearing on residency

Tuition for out-of-state residents and international students is \$188 per credit. Any person attending the College with a student visa must pay out-of-state tuition.

NEW ENGLAND REGIONAL STUDENT PROGRAM

The New England Regional Student Program enables New England residents to enroll in out-of-state public colleges and universities in the six-state region (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont) at reduced tuition rates, for certain degree programs that are not offered by their home-state public institutions. The purpose of the program is to expand opportunities in higher education for New England residents by facilitating access to programs not commonly offered at every institution. This practice tends to reduce duplication of courses, and to utilize most efficiently the higher educational facilities in each state.

For detailed information, contact the STCC Admissions Office, any high school guidance counselor, or the New England Board of Higher Education, 45 Temple Place, Boston, MA 02111, (617) 357-9620.

TUITION REFUNDS

Tuition refunds are made only to those students who officially withdraw from the College. In order to do this, a student should personally, or by written communication, notify the Registrar of his decision. The College will, thereupon,

refund a portion of the student's tuition according to the following schedule established by State Regulations:

Withdrawal during first week	90 percent
Withdrawal after one week	70 percent
Withdrawal after three weeks	50 percent
Withdrawal after four weeks	No Refund
All refunds take approximately six (6) weeks.	

It should be noted that no provision is made for refunds of any other fees or charges except for tuition.

For some students receiving Title IV financial aid, federal government regulations dictate a pro-rata refund policy which differs from the above. For more information contact the STCC Financial Aid Office.

PARKING FEE

Parking is limited on campus. Parking fees will be established each year. Off-campus parking is available near the College for varying prices.

BOOKS AND SUPPLIES

Estimated costs for books and supplies vary by department, but \$175 per semester should pay for most books and supplies. The College bookstore provides, at reasonable costs, many of the items that students require during their stay at STCC.

SUMMARY OF TUITION AND FEES

The financial requirements of STCC, changing costs, state and legislative action, and other circumstances may require adjustments in the tuition and fees stated or estimated below. The College reserves the right to make such adjustments in these charges as may from time to time be required by the Higher Education Coordinating Council or the Board of Trustees. Students acknowledge this reservation by submitting applications or by registering for classes.

Application Fee for Mass. Residents (non-refundable)	\$ 10
Application Fee for Out-Of-State Students (non-refundable)	35
Tuition for Mass. Residents (per credit)	40
Tuition for Out-Of-State Students (per credit)	188
General Education Fee (per credit)	44
Late Registration Fee	50
Student Health Insurance mandatory (approx.)	336
Student Liability Insurance (approx.) mandatory—	
Allied Health & Nursing Students	15
Radiation Therapy students	141
Transcripts (each)	3
Schedule Reprint Fee	1
Mass. PIRG (optional)	5
Deferred Payment Plan Fee	50
Capital Improvement Fee (per credit)	6
Student Activities Fee (per semester)	23

Financial Aid

The purpose of the Financial Aid Office is to provide financial assistance for those students who would otherwise be unable to attend college because of economic limitations. Based on an individual's financial need, the Financial Aid Office allocates funds to assist eligible students in paying for the cost of their college education. Assistance is provided through several sources and a student may receive a combination of more than one type of aid. The amount and type of aid a student receives is subject to allocations received by the College and governed by federal, state, and College regulations.

ELIGIBILITY REQUIREMENTS FOR RECEIVING FINANCIAL AID

The student must:

- have a high school diploma or a GED
- enroll as a regular student in an eligible degree or certificate program for the purpose of obtaining a degree
- be a U.S. citizen or eligible noncitizen
- make satisfactory academic progress
- sign a Statement of Selective Service Registration Status, Educational Purpose, and Refunds and Defaults

APPLICATION PROCEDURE

The student must complete the Free Application for Federal Student Aid (FAFSA) in order to apply for financial aid. It takes approximately four to six weeks to process a FAFSA. The student will be mailed a Student Aid Report (SAR) by the processor. The student must submit the SAR to the STCC Financial Aid Office in order to initiate the financial aid process. An STCC Financial Aid Form will be mailed to the student on receipt of the SAR. The student will also be contacted if any documentation of income is needed.

Deadlines: Applications are available year round, however due to limited funding students are urged to apply early. Applications received after April 1 are considered late. Students must submit applications for the Massachusetts State Scholarship before the May deadline.

TYPES OF ASSISTANCE

The following aid programs are available to students at STCC.

A. FEDERAL AID

PELL GRANT is an award for students who have not earned a B.A. degree. There is a standard formula which produces an index number. The amount ranges from \$200 to \$2340 per year. The amount of the grant is determined by the index number, the cost of education at STCC, and the number of credits the student enrolls for during the semester.

SUPPLEMENTAL EDUCATIONAL OPPORTUNITY GRANT (SEOG) is a grant for students who have not earned a B.A. degree and who demonstrate exceptional need. Funding is limited.

COLLEGE WORK STUDY (CWS) is a federal work program that provides jobs to students to help pay for educational expenses. This program encourages community service and work related to the student's course of study. Community service employment allows students to work in a non-profit agency, on or off campus, and encourages a sense of responsibility. A student who accepts a community service position will be asked to evaluate the experience. Regular work/study positions are available on campus, and every effort is made to place students in their field of study. Students are paid at least the minimum wage and can work 10-20 hours per week. Funding is limited.

PERKINS LOAN is a low interest loan (5%) for students demonstrating exceptional need. Repayment of this loan begins nine months after the student leaves school or drops below six credits. Funding is limited.

DIRECT STUDENT LOAN is a low-interest loan awarded through the College. The interest varies, but will not exceed 8.75%. There are both subsidized and unsubsidized loans available. A subsidized loan is awarded on the basis of need, and the federal government will pay the interest on the loan while the student remains in school. If the student qualifies only for an unsubsidized loan, he or she must pay the interest while attending school. Repayment for all student loans begins six months after the student completes studies, terminates enrollment, or drops below half time. More detailed information on loan borrowing is available in the Financial Aid office.

PARENT PLUS LOAN – a loan available to the student's parents to help meet educational expenses. Parents are required to pass a credit check. Parents will begin repaying both the principal and the interest while the student is still in school.

B. STATE AID

MASS. STATE SCHOLARSHIP requires that a student be a resident of Massachusetts for at least one year prior to the beginning of the Fall semester. Students must be enrolled full time (12 credits). Priority deadline is May 1st.

TUITION WAIVER is a waiver of part or all of the tuition charges (does not include fees). The student must be a Massachusetts resident enrolled in the DAY division. Funding is limited.

STIA is a grant program available to Massachusetts state residents enrolled in the DAY Division. Funding is limited.

MASS. STATE NO INTEREST LOAN (NIL) program offers a zero interest, long-term student loan to Massachusetts residents who demonstrate a financial need. Students must be enrolled full-time (12 credits).

Dependent students are considered to have the same state of legal residence as their parent(s).

C. OTHER

There is a limited number of scholarships offered by the college and by private organizations in the greater Springfield area. This information is available in the Financial Aid Office, Garvey Hall, Room 285.

HOW NEED IS DETERMINED

Each student applying for financial aid has a budget. This budget consists of direct educational costs for tuition, fees, books, and supplies, as well as those costs which are incurred by virtue of attendance such as transportation and lunch. In addition, students may have costs related to room and board, recreation, and personal expenses. From these expenses available resources are deducted. These resources may include taxable and non taxable income, and a percentage of the assets of the student, spouse, and/or the parents. The difference between the total expenses and the family contribution is the student's financial need.

OBLIGATIONS AND RESPONSIBILITIES

The Pell Grant program is the only financial aid program in which the student may receive aid if he or she is enrolled for less than half time. Any student enrolled for less than full time (12 credits) may have their award prorated. **Enrollment status will be determined after class lists are updated.** Students who drop credits during this time will have their Pell Grant and Tuition Waiver reduced accordingly.

All students must notify the Financial Aid Office when a course(s) is dropped or a withdrawal from school is initiated. In these cases, the award amount which the student has already received will be evaluated to determine if the student must repay any portion of this award. The College has a tuition refund policy for students who officially withdraw from school early in the semester. However, if the student is receiving financial aid, the refund policy that applies is different than the College refund policy for day and evening students.

1. If the student is attending STCC for the first time, the refund period for withdrawals is through the first 60% of the semester (the 9th week).
2. For a returning student, the refund period for withdrawals is through the first 50% of the semester (7 1/2 weeks).

If the student withdraws from school before his or her financial aid file is complete, the student will be responsible for all of his or her educational costs. If the student made a cash payment toward tuition and fees, financial aid cannot reimburse him or her for that payment.

All students must notify the Financial Aid Office of any change in his/her and/or his/her parents' income status, as well as name and address changes. All students are required to notify the Financial Aid Office of any additional funds received from outside sources during the academic year (scholarships, student employment [co-op], tuition waivers, etc.). The Financial Aid Office is required to adjust the student's budget and/or revise his/her original aid award.

Loan recipients must have an entrance and an exit interview prior to completion of their course of study or their departure from the institution. The institution will counsel all borrowers regarding responsibility of loan indebtedness and repayment obligations.

COLLEGE WORK STUDY recipients must report to the Financial Aid Office for a job assignment. Failure to report for a work study placement within (2) two weeks from the first day of classes will result in termination of this award.

SATISFACTORY PROGRESS

This policy has been revised, effective fall 1995. In accordance with federal requirements, in order to receive financial aid, the College is required to establish guidelines on satisfactory progress in a degree-granting program.

Quality Point Average

All day and evening students must maintain a minimum quality point average in order to be eligible for financial aid.

<i>Number of credits attempted</i>	<i>Minimum cumulative average</i>
12+	1.5
27+	1.7
42+	1.9
60+	2.0

Students who are suspended from day school and who wish to attend evening school are not eligible for financial aid.

Satisfactory Progress

Academic history is reviewed for all students applying for financial aid, whether or not aid was previously received.

All day and evening students must successfully complete a minimum number of credits in each academic year in order to be eligible for financial aid.

<i>Number of credits attempted per last academic year attended</i>	<i>Minimum number of credits successfully completed per academic year *</i>
24 or more	18 credits/year
8-23	75% of credits attempted, rounded down to the nearest credit
1-7	all credits attempted

Grades are reviewed at the end of each academic year. Courses attempted during the fall and/or spring will be combined.

- * Exception: Students enrolled in one-year certificate programs will have grades reviewed at the end of each semester to determine continued eligibility for financial aid.

Successfully completed grades: A, B, C, D

Unsuccessful grades: W, F, I

Time Limit

The institution is required to establish a maximum time frame in which the student is reasonably expected to complete his or her educational objective. Students cannot attempt more than 135% of the total credit hours required for completion of their degree or certificate program.

Two-year degree students: can NOT attempt more than 85 credits toward their degree while receiving financial aid.

One-year certificate students: can NOT attempt more than 41 credits toward their certificate while receiving financial aid.

The first 24 credits earned in remedial course work (non-degree credits) will not count toward the maximum credit limit. ESL credits are not counted toward the maximum credit limit.

Intra-college transfer: Courses previously earned at this institution that can be applied toward the new degree will be counted toward the maximum credit limitation.

Cancellation of Financial Aid

QPA: Students who fail to maintain the minimum QPA will be placed on probation or suspension by the Dean of Students. Suspended students are not eligible for financial aid.

Credits attempted: Students who do not complete the required number of credits per academic year will not be eligible for financial aid for the next academic year.

Students who enroll for both the fall and spring semesters who do not pass **any** of their courses successfully, CANNOT appeal.

Time limitations: Students who do not complete their degree requirements within the maximum number of credits allowed will no longer be eligible for financial aid.

Appeal Procedure

Since grades are now reviewed once a year, students whose aid is cancelled may appeal this decision only if there are extenuating circumstances. To appeal, the student must complete the Appeal Form and submit it to the Financial Aid office within the established deadline. ALL SUPPORTING DOCUMENTATION MUST BE ATTACHED, OR THE FINANCIAL AID OFFICE WILL NOT ACCEPT THE APPEAL FORM. After reviewing the written appeal and all documentation, the Financial Aid Committee will notify the student in writing. All aid remains cancelled unless the student receives written notification that the appeal was approved for the next semester of enrollment. The committee reserves the right to limit the student's enrollment to less than full time.

If the appeal is approved, the student MUST complete the minimum number of required credits (see satisfactory progress chart). If the student does not meet these minimum requirements, aid eligibility is cancelled for the next academic year and the student cannot appeal.

Extenuating Circumstances

Students may appeal only if there are extenuating circumstances such as: medical reasons, personal problems, changing degree program, returning to school after a long absence, or if the student continued to attend classes after financial aid eligibility was cancelled, and successfully completed at least 9 credits with a grade of "C" or better.

Additional Information

Fresh Start students: Student who are accepted into the College under the Fresh Start program will have their complete academic history evaluated for purposes of financial aid eligibility.

Self-Paced Math: For the purposes of financial aid eligibility, students enrolled in a 3-credit self-paced math course are expected to complete all 3 credits. If a student does not need all 3 credits to complete the math requirement, he or she must get a billing adjustment for the correct number of credits.

Veterans' Information

Prior to applying to the day or evening division, all students should contact the Veterans Affairs office for the correct procedures to follow in order to establish V.A. benefits. All new students eligible to receive V.A. benefits must contact the office of Veterans Affairs upon receiving their acceptance letters. All returning students receiving V.A. benefits must contact the Veterans Affairs office after pre-registering for the upcoming semester. Registering with the College does NOT certify an eligible student for V.A. benefits for the upcoming semester. All eligible students must contact the V.A. office in person to initiate enrollment certification. Students must also be matriculated in a degree-granting program to receive their benefits.

NOTE: All students receiving V.A. benefits must contact the office of Veterans Affairs before withdrawing from a course or terminating enrollment, and when changing an address, changing dependent status, or changing an academic program.

All students should contact the Financial Aid office to investigate eligibility for federal and state grants and scholarships.

ACADEMIC STANDING

The quality point index is required to maintain acceptable academic standing in an approved program of study in either the Day Division or the Division of Continuing Education.

For complete information on academic standing, refer to page 40.

For Continuing Education purposes, the completion of 12 semester hours will be considered the completion of a semester.

Students receiving benefits from the Veterans Administration are advised that if their quality point average does not permit them to remain in a program, they may continue to attend Evening Division courses at their own expense until their average allows them to re-enter the program.

Students are cautioned that the V.A. will not provide benefits to repeat a course which has been previously passed, nor will they support courses which do not meet the requirements for an approved program of study.

Students receiving benefits from the Veterans Administration are advised that benefits will be extended only for the normal length of time that an approved program is designed to encompass. Full-time students must complete associate degree programs in five semesters. Part-time students will receive reduced benefits for the extended period of time necessary to complete their program of study. Specific questions about benefits, program approval and eligibility will be answered by the Veterans' Office on campus.

GRADING PROCEDURE AND UNSATISFACTORY GRADES

STCC makes use of a scale from "A" to "F" converted into quality points which are utilized in determining a cumulative average. A grade of "F" equals 0 quality points and is unsatisfactory. A "D" equals 1.0 and may count toward a degree if the quality point cumulative average is maintained with respect to degree specifications. (Refer to page on Minimum Prerequisites for Admission.) The Veterans Administration does not authorize benefits for courses which are audited or challenged. **A withdrawal or termination from a course could constitute an overpayment for the veteran.**

WITHDRAWAL AND ABSENCES

All students are required to notify the Registrar of withdrawals or terminations. Students receiving benefits must also contact the office of Veterans' Affairs. Attendance procedures are at the discretion of the faculty.

Students receiving Veterans Administration benefits will be considered to be making satisfactory progress in each course each semester at the following intervals:

1. If their names appear on the official class list certified by the instructor at the end of the official add/drop period.
2. If they receive a mid-semester grade.
3. If they receive a final grade.

In the event any of 1. through 3. does not occur, the V.A. will be notified within 30 days after the enrollment report or grade report has been issued that said student is not enrolled in the course.

Faculty members may request the Dean of Student Services to withdraw a student for excessive absences.

TUITION WAIVERS AND/OR EXEMPTIONS

For information regarding veterans tuition waivers or Massachusetts National Guard tuition exemptions, contact the office of Veterans Affairs. Students expecting to receive one of these waivers/exemptions must come to the V.A. office prior to the start of each semester.

All veterans are encouraged to contact the office of Veterans Affairs prior to registration so that the staff can assist you with information and the necessary paperwork to establish your benefits.

The Veterans Affairs office is located within the Division of Continuing Education, on the first floor of Garvey Hall South (Building 15).

Academic Information

DEGREE PROGRAMS

CAREER PROGRAMS

Associate Degree

STCC offers a variety of career programs that are designed primarily for the individual seeking two years of higher education and immediate job opportunities upon graduation. Such career programs are available in the Engineering Technologies, Business Administration, Health/Human Services, and Social Sciences. Each of the career programs offers a two-fold objective. The student receives a general education background to provide him/her with a better understanding of the community around him and a technical preparation designed around a specific occupation.

Career students who plan to continue their education beyond the two-year level are advised to consult with their College counselor early in the program.

Certificate Programs

In addition to the two-year, associate degree career programs, there are also four one-year certificate programs, as well as a number of shorter certificate of completion programs, several of which are administered by the Division of Continuing Education

Certificate of Completion Programs

Several academic departments offer certificate of completion programs providing training for entry-level positions. These programs are designed to assist individuals who wish to develop marketable skills and need more rapid entry into the job market. Certificate of completion programs offered at STCC include:

Business Division

- Accounting
- Data Processing
- Medical Transcription
- Microcomputer Specialist
- Word Processing

Engineering Technologies Division

- Architectural Technology
- Computer-Aided Drafting
- Computer-Aided Manufacturing
- Computer-Integrated Manufacturing
- Electrical/Robotics Technology
- Electronic Systems Technology
- Environmental Technology
- Graphic Arts Technology
- Heating/Ventilation/Air Conditioning
- Landscape Design and Management
- Occupational Health and Safety for Registered Nurses

Health/Human Services Division
Medical Record Coding Specialist
Nursing Division
Multiskilled Health Care Technician
Multiskilled Mental Health/Mental Retardation Nursing Assistant

These programs are offered through the Day Division. Please see page 61 for certificate of completion and other programs offered through the Division of Continuing Education.

TRANSFER PROGRAMS

The transfer programs are designed for students who plan to transfer to a senior college or university after completion of one or two years at STCC. The courses offered in these curricula are generally those required to provide a broad educational background before beginning specialization in a major field of study. A high quality of academic achievement, revealing seriousness of purpose and of sound habits of study, is the most important qualification for successful transfer.

Four primary transfer programs are offered at Springfield Technical Community College:

1. Business Administration
2. Engineering and Science
3. Liberal Arts
4. General Studies

Many students attending the College consider, at some point in their career, transferring to a four-year institution. It is possible to transfer in a variety of areas, although careful planning is required. Students should be in early and constant contact with the transfer counselor and their academic advisor so that their preparation for transferring is correct.

Transfer Counseling

Students interested in transferring to four-year colleges should plan early in order to take courses or programs paralleling requirements at the college they plan to attend. Assistance, in the form of individual advisement, is available by contacting the Office of Cooperative Education/Career Services and Transfer Affairs. In addition, catalogs, applications, and other transfer resources are available. Prospective transfer students should also review the Commonwealth Transfer Compact Information below:

Commonwealth Transfer Compact

The Commonwealth Transfer Compact is an articulation agreement between the four-year state colleges and universities and the community colleges in Massachusetts. In 1990 the Compact was revised to provide a better process to facilitate the transfer of college credits and to ensure appropriate recognition for academic progress earned by students in a community college who wish to transfer and continue their education at a Massachusetts public college or university.

The Compact provides that an associate of art or an associate of science degree will be transferred as a unit (providing the student meets all admission requirements and is accepted) and will be applied toward a bachelor's degree, if the following courses are included in the associate degree:

Compact Core Courses

6 semester hours of English composition/writing

9 semester hours of behavioral and social sciences

9 semester hours of humanities and fine arts

8 semester hours of natural or physical science (with a laboratory component)

3 semester hours of mathematics

The remaining credits making up the total of 60 are to be on a college level.

Other points of clarification regarding the Compact include:

1. The student must complete the associate degree with a minimum of 60 semester hours exclusive of developmental coursework.
2. All Transfer Compact requirements must be fulfilled while meeting the requirements for the associate degree.
3. A Compact student may be required to take no more than 68 additional credits at the four-year college unless the student changes his/her program upon entrance, or additional general education requirements and/or requirements of the major total more than 68 credits.
4. The grade of "D" or "D-" will be accepted toward the bachelor's degree, but a receiving institution is required to apply "D" or "D-" credit toward a major only if it does so for "native" students, that is students who enrolled in the four-year institution as freshmen.
5. A student must have achieved a cumulative grade point average of not less than 2.0 at the community college awarding the degree to receive Transfer Compact status.
6. If a student has not completed the associate's degree, credit earned does not come under the protection of the articulation agreement.
7. Transfer Compact status **does not** assure admission to any state college or university. It only assures acceptance of college-level credit.

Transfer Articulation Agreements

In addition to the Commonwealth Transfer Compact with the public institutions of higher education in the state, the College has individual transfer agreements with several private and public colleges. These agreements ensure graduates of corresponding STCC programs entrance on the Junior level.

Transfer Articulation Agreements currently are in effect with the following institutions:

American Armenian International College of LaVerne, CA - B.S.,
Optical Engineering

American International College - B.S., Nursing

Boston University College of Engineering - B.S., Engineering

Elms College - B.S.W., Social Work; B.S., Nursing, B.S.,

Health Science Management

Fitchburg State College - B.S., Industrial Arts

Framingham State College - B.S., Nursing

Rensselaer Polytechnic Institute - B.S., Engineering

Rochester Institute of Technology - B.S., Engineering Technology

Russell Sage College - B.A., Mathematics; B.S., Computer Science

Springfield College - B.S., Biology

University of Hartford - B.S., Respiratory Therapy
University of Massachusetts at Amherst - B.S., Engineering;
Education; B.S., Nursing
University of Massachusetts at Dartmouth - B.S., Engineering
Ward College - B.S., Electrical Engineering Technology
Western New England College - B.S., Engineering, B.S., Business Administration
Westfield State College - B.S., Early Childhood Education; B.S.,
Management Information Systems
Worcester Polytechnic Institute - B.S., Engineering
For additional information, contact the Office of Academic Affairs.

Joint Admission with the University of Massachusetts at Amherst

Springfield Technical Community College participates in the Joint Admissions Program with the University of Massachusetts at Amherst. This program guarantees participating students admission to the University school or college of their choice, provided they graduate from a comparable transfer program at STCC with a cumulative grade point average of 2.50 or higher. Participating students are subject to the program requirements in effect at the University when they matriculate at STCC, and must earn their associate degree at STCC within five years of matriculation.

University Without Walls

The University Without Walls (UWW) is an adult bachelor's degree program of the University of Massachusetts in which students design an individualized degree in a field of their choice and convert learning from life experience into academic credit.

The University Without Walls transfer option of the General Studies associate degree provides adult learners with the opportunity to earn an associate degree, complete UMass general education requirements, and make connections between a liberal arts education and life experience. This option is ideal for adults who have career and life experience and are interested in a four-year degree in any field, but have few or no college credits. UWW maintains an office on the STCC campus in Garvey Hall, Room 267. Telephone 732-5262. The STCC advisor for this program is Cecelia Gross, telephone 781-7822, extension 3353.

REQUIREMENTS FOR GRADUATION

GRADUATION REQUIREMENTS

The Springfield Technical Community College Board of Trustees has statutory authority under the Commonwealth's Higher Education Coordinating Council to confer academic degrees. Candidates for degrees shall have fulfilled the following requirements:

1. Candidates for degrees must meet all departmental graduation requirements. A minimum of 15 credit hours must be earned in residence at the College. Also, the student must have completed at least 20 credits in general education.

2. The student must have earned a minimum cumulative quality point average of 2.0 for all college level courses. Developmental courses are not credited toward graduation requirements.
3. The student must have satisfied all financial obligations to the College.
4. A Perkins Student Loan recipient or a federal Direct Student Loan recipient must have completed the exit interview with the Financial Aid Officer or his representative.
5. To earn a second degree or certificate at STCC, the student must complete a minimum of 15 separate and distinct credits at STCC and meet all specific requirements of the new program.

GENERAL EDUCATION CURRICULUM

Students enrolled in an Associate in Science degree program are required to take a minimum of 20 credits in general education. For those in an Associate in Arts program, the minimum requirement is 33 credits in general education. The configuration of courses is distributed among the math and natural sciences, the humanities, and the social behavioral sciences.

The purpose of general education courses is to develop in students the capacity for critical thinking; the ability to communicate effectively; an appreciation for the arts and humanities; and an understanding of the historic basis of our modern, technological society. General education also aims to assist in the development of people who are educated in mind, responsive to civic and social obligations, capable of adjusting to change, and learners for life.

Consult the individual departmental course of study for the specific distribution of general education courses required by each program.

SPECIAL PROGRAMS

DEVELOPMENTAL EDUCATION PROGRAM

The College offers developmental courses in math, science, English, and reading. Students enrolled in these courses receive support in the form of tutoring, progress evaluation, advising, and counseling as needed, with special attention toward fulfillment of students' academic career goals.

The General Studies/Developmental Education Division identifies and guides students in "cores" of study based upon their selected fields of interest. Faculty advisors are assigned to the students after an initial interview and scheduling session has been completed with a General Studies academic advisor.

The Testing and Assessment Center located in Building 17, Room 425, is the test/tutorial area for developmental mathematics. With the help of professors, audio tapes, peer tutors, and video tapes, students progress through various levels of mathematics at their own rate. In addition to their assigned class period, students may use the facilities at any time the Testing and Assessment Center is open.

The Developmental English Department offers developmental writing and reading courses and a special course of study for students for whom English is not the native language. The department offers tutorial services through its Tutoring and Testing Center in Building 13, Room 101. The department also offers

computer-assisted learning in the computer laboratory in 13/105 and a full-service language laboratory for English As A Second Language courses in 13/305.

ENGLISH AS A SECOND LANGUAGE PROGRAM

The English As a Second Language Program has been designed to help students develop language skills for successful performance in a regular program at STCC.

Students are given the University of Michigan placement test and placed in the appropriate level according to the test score.

The program offers four different levels of English As a Second Language courses. Each level has three courses, for a total of thirteen hours of direct instruction per week. Students who complete 27 credits in English as a Second Language courses are recognized in a certificate ceremony in May.

The program also provides tutors for students who need additional support to enhance their understanding of English grammar concepts and to help them improve their language skills.

The English As a Second Language Program is offered through Core 6 of the General Studies Program. Please see page 169 for further information.

HONORS CERTIFICATE PROGRAM

The Honors Certificate Program offers a challenging academic experience for qualified students who wish unique study and research opportunities in their major field of study. Working individually with selected professors, Honors Certificate Program participants receive specialized advising and support services, increased scholarship and transfer opportunities, and a special notation of distinguished academic work on diplomas and transcripts.

Students accepted into this program are required to complete at least 13 credit hours of honors-level courses before graduation. Six of these credits should be taken in honors colloquia courses, with one additional credit in library research.

Honors Certificate Program participants are selected on the basis of their academic potential and motivation. Entering freshmen with a 3.5 QPA from high school, or a 3.0 QPA from a high school honors program (or its equivalent), or a 1000 combined SAT score are eligible to apply for admission.

Currently-enrolled students at STCC are eligible after completing 12 college-level credits, if their QPA is 3.5 or higher.

Students whose QPA's do not meet these standards, but who feel they have the ability and interest necessary to participate in the Honors Certificate Program may apply for admission by submitting (1) a letter of recommendation from a recent teacher, and (2) either a letter of intent explaining why admission to an Honors Program is sought, or an original piece of writing demonstrating academic competence.

For further information and an Honors Certificate Program application, contact the Office of Academic Affairs.

COOPERATIVE EDUCATION/CAREER SERVICES AND TRANSFER AFFAIRS

This office offers a wide variety of employment-related services to students and alumni. The Cooperative Education program allows students to earn credit for taking advantage of part-time employment in their field while completing degree requirements. Career Services assists students and alumni who are seeking full-time or part-time employment after graduation. Both programs strive to bring students and the business community together for the mutual benefit of each.

Cooperative Education/Internship

In order to participate in Cooperative Education, a student must maintain a 2.5 quality point average. Most students participate in Cooperative Education/Internship during their third semester in an established major; however, it is possible to participate in the program prior to that point. Students interested in participating prior to their third semester must receive a written recommendation from their faculty coordinator; final approval is made by the Director of Cooperative Education and Career Services.

Once a student is accepted into the program, a job developer and the student work together in securing a qualified position. During the first week of job placement, a learning contract is executed by the student, the faculty coordinator, the employment supervisor, and the Director of Cooperative Education and Career Services. This learning contract outlines the learning goals and objectives as well as the criteria to be used in grading.

The faculty coordinator meets regularly with the student, evaluates his/her work performance, and determines a letter grade at the end of the semester. Students may receive a 3- or 6-credit Cooperative Education experience in one semester depending on the number of hours to be worked and the type of responsibilities to be required of the student. A total of 9 credits may be earned in the program during a student's quest for a degree. Programs participating in Cooperative Education/Internship are:

- Automotive Technology
- Biomedical Instrumentation Technology
- Business Administration
 - Accounting
 - Finance
 - General Business
 - Management
 - Marketing
- Civil Engineering Technology
- Computer Information Systems/Data Processing
- Computer Systems Engineering Technology
- Drafting Technology*
- Early Childhood Education
- Electrical/Robotics Technology
- Electronic Systems Engineering Technology
- Energy Systems Technology
- Engineering and Science Transfer
- Environmental Technology

- General Studies
- Graphic Arts Technology
 - Options: Commercial Art
 - Printing Technology
- Landscape/Design and Management Technology
- Laser Electro-Optics Technology
 - Options: Laser Applications
 - Photonics
 - Optical Fabrication and Testing
- Law Enforcement/Criminal Justice
- Liberal Arts
- Mechanical Engineering Technology
 - Options: Computer-Aided Design/Computer-Aided Manufacturing
 - Computer Integrated Manufacturing
- Office Administration
 - Clerical Office Assistant*
 - Executive Office Administration
 - Legal Office Administration
 - Medical Office Administration
 - Word Processing Management
- Telecommunications Technology

*one-year certificate program

The Office of Cooperative Education/Career Services and Transfer Affairs is located on the second floor of Building 27.

ACADEMIC SUPPORT SERVICES

STUDENT SUPPORT SERVICES PROGRAM

The Student Support Services program provides college students with assistance in meeting their academic goals. Project services are designed to facilitate a student's adjustment to the college environment and to maximize his or her potential for success. Specific services include: academic and career advising, specially-designed orientation and workshops, personal counseling, and a one-semester course. The program emphasizes individual contact with each project participant. Student Support Services is located in Building 27, second floor, and is a part of the General Studies Division.

BILINGUAL PROGRAM

The Bilingual Program at STCC is designed to assist students whose native language is other than English. Bilingual counselors provide academic/vocational counseling and personal counseling as well as tutoring in English and assistance in filling out financial aid forms. The Bilingual Services Office is located in Garvey Hall (Building 16), room 146.

TUTORIAL ASSISTANCE PROGRAM

The Tutorial Assistance Program is an important component of Springfield Technical Community College. Through the services of this program, students in need of

tutorial assistance receive tutoring in any academic field. The Tutorial Assistance Program is administered through the Academic Affairs Office in Garvey Hall.

REGISTRATION AND ACADEMIC RECORDS

ACADEMIC YEAR

The academic year at Springfield Technical Community College is divided into two semesters with the first semester ending prior to Christmas vacation and the second semester resuming in the latter part of January. The final week of each semester is devoted to final exams. Unless a formal change is published, the calendar in the STCC College Catalog is official.

CLASS SCHEDULE

A class schedule is published each year along with the academic calendar.

In the majority of cases, with the exception of Directed Study courses, three-credit courses meet three times a week and are of 50 minutes duration, or are 75 minutes long and meet twice a week. Exceptions may be found in career curricula and other special programs. Most classes follow a Monday/Wednesday/Friday or a Tuesday/Thursday meeting schedule, and usually begin at 8:30 a.m.

REGISTRATION PROCESS

Returning students must pre-register for the spring semester in November, and for the fall semester in April of each year, with their faculty advisors. It is the student's responsibility to seek out information concerning departmental course requirements prior to pre-registration. This may be done with the assistance of the faculty advisor, department chairperson, or the Counseling Center. Returning students are expected to pay their bills and complete the registration process prior to the start of classes. Returning students who fail to pre-register are charged a \$50 late fee.

New students are encouraged to attend an orientation session held in both August and January prior to the beginning of classes, at which time they are expected to pay their bills and complete registration.

Students wishing to change their schedules may do so during the first week of classes. Admittance to a course at this time is, however, dependent upon the seats available.

EXAMINATIONS AND GRADES

Final examinations are scheduled for each course. At the end of each semester, all students receive written letter grades according to the following standards:

Letter Grade	Qualitative Equivalent	Quality Points
		Earned Per Credit Hour
A	93-100	4.0
A-	90-92	3.7
B+	87-89	3.3
B	83-86	3.0
B-	80-82	2.7
C+	77-79	2.3
C	73-76	2.0

C-	70-72	1.7
D+	67-69	1.3
D	63-66	1.0
D-	60-62	0.7
F	Below 60	0.0
I	Incomplete	no grade
W	Withdrawn	no grade
AUD	Audit	non-credit*

*Non-graduation-credit courses are not factored into the Quality Point Average.

The grade of Incomplete (I) indicates that a major requirement of the course has not been completed. The following policy shall apply to incompletes:

1. An "I" (Incomplete) is a temporary grade assigned to students who fail to complete the requirements of a course. The grade of "I" is to be assigned only to the few students who have valid, approved reasons for their inability to complete the course work on time. An "I" is not to be assigned to a potential failure.
2. An "I" (Incomplete) will change to "F" four weeks after the beginning of the next regular academic semester.
3. This policy shall apply uniformly to the Day Division and the Division of Continuing Education.

ACADEMIC STANDING

A. *Required Quality Point Average*

The quality point average required to maintain good academic standing is:

1. A minimum of 1.5 cumulative average for students who have attempted 12 or more credits at Springfield Technical Community College, including accepted transfer credits.
2. A minimum of 1.7 cumulative average for students who have attempted 27 or more credits at Springfield Technical Community College, including accepted transfer credits.
3. A minimum of 1.9 cumulative average for students who have attempted 42 or more credits at Springfield Technical Community College, including accepted transfer credits.
4. A minimum of 2.0 cumulative average for students who have attempted 60 or more credits at Springfield Technical Community College, including accepted transfer credits.

NOTE: Incomplete, Withdrawal, and Failure grades are counted as courses attempted, but Incompletes and Withdrawals are not factored into the quality point average. Non-graduation credits, from developmental courses which are designated by course numbers beginning with 0 as in LD 099, are not transferable and are not averaged into the graduation cumulative quality point average. See next page for further information.

B. *Probation and Suspension*

Students who do not meet the above requirements will be placed on academic probation. After one semester of probation, a student will be:

1. Suspended unless the cumulative quality point average is raised to that required for good standing (i.e., 1.7 for 27 hours, 1.9 for 42 hours, 2.0 for 60 hours or more), or
2. Continued on probation if the semester quality point average is 2.25 or above but the cumulative point average stays below that required to remain in good standing, or
3. Continued on probation if not in attendance, or
4. Removed from probation if the cumulative point average is raised to or above that required to maintain good academic standing.

NOTE: A student may be suspended without having previously been placed on probation if the cumulative average falls below 1.0.

C. *Waiver of Provisions of the Academic Standing Policy*

The Dean of Student Services Office administers the Academic Standing policy and questions may be addressed to that office.

An Academic Review Committee is named by the President of the College. The Committee has the authority to:

1. Re-admit students.
2. Waive provisions of the policy on academic standing.
3. Hear student petitions or grievances pertaining to the policy.
4. Give counsel and advice to those who administer the policy and give interpretation and intent clarifications.

Students in the health science programs must maintain a minimum quality point average of 2.0 in their major area of concentration and be accepted by a clinical facility for affiliation. Nursing students must maintain a 2.15 in their major area of concentration. All students in health sciences and nursing must maintain a quality point average of 2.0 in the biological and physical sciences.

The accumulation of credits alone does not necessarily mean that a student is entitled to a degree. A student should refer to his/her specific program curriculum for graduation requirements.

DEVELOPMENTAL COURSES (NON-COLLEGE LEVEL)

Springfield Technical Community College has a number of courses that aid students with deficiencies in specific subject areas. These courses, all with course numbers below 100, are intended to bring the student's skill to a level where the student will be able to accomplish the college-level work. It is the policy of the College that, relative to developmental courses (non-college levels), the following shall apply:

1. Academic credit will be awarded for developmental courses but will not count for graduation credit.
2. Developmental courses shall not be calculated into a student's quality point average on a semester basis nor shall such grades be calculated into a student's cumulative quality point average.
3. All registrations for developmental courses shall appear on student transcripts.

CLASS ATTENDANCE/GRADING POLICY

The faculty of the College has voted to allow each instructor to set his/her own classroom attendance policy. Each faculty member will notify his students in writing at the start of each semester of his/her attendance policy, grading policy and course requirements. The Dean of Student Services will, upon request from an instructor, warn students when they are in violation of an instructor's published attendance policy. The Dean of Student Services may, at the recommendation of the instructor, withdraw such a student from that class.

Off-campus activities, appropriately supervised and sponsored by faculty members, which justify a student's absence from scheduled classes, must be approved in advance by the Dean of Student Services. Such activities must be justifiable on grounds consistent with the educational program of the College. Whether a student is excused from class or examination to participate in such activities is determined by the instructor concerned.

MID-SEMESTER GRADES

At mid-semester, students will be graded by each of their professors. These grades will be recorded by the Registrar and forwarded to each student's advisor during pre-registration. These grades will not become part of a student's permanent record but are used to indicate his/her performance through the first half of the semester.

MAKE-UP EXAMINATIONS

A student failing to take a semester examination may apply in writing to the appropriate academic dean and the instructor concerned, and, subsequently, the Executive Vice President/Dean of Academic Affairs, who may give permission to take a make-up examination. If, in their opinion, absence from the regularly scheduled examination was unavoidable, the student may take a make-up examination upon payment of a \$5 fee.

If the student's absence is due to his/her religious beliefs, then the following legislation will apply.

Any student in an educational or vocational training institution, who is unable, because of his religious beliefs, to attend classes or to participate in any examination, study, or work requirement on a particular day shall be excused from any such examination or study or work requirement, and shall be provided with an opportunity to make up such examination, study, or work requirement that he may have missed because of such absence on any particular day; provided, however, that such makeup examination or work shall not create an unreasonable burden upon such school. No fees of any kind shall be charged by the institution for making available to the said student because of his availing himself of the provisions of this section.

COURSE CHANGES (ADD/DROP)

Students are permitted to add and drop courses (subject to the approval of faculty advisors) prior to the start of the semester and during the first week of classes without penalty.

COURSE WITHDRAWAL

A student may withdraw from a course after the Add/Drop period through the twelfth (12th) week of classes with the grade of "W" (withdrawal) recorded on his/her official transcript. After the twelfth (12th) week, a grade will be recorded on the official transcript. Withdrawal forms require the signature of the course instructor, the faculty advisor, and the Registrar. Each semester there is a deadline for withdrawal.

REPETITION OF COURSES

Any student who receives an unsatisfactory grade in a course may repeat that course and both grades will appear on his permanent record. However, only the last occurrence will be calculated into his/her quality point average.

AUDITING OF CLASSES

Students may attend certain classes as auditors (i.e., without receiving credit) under the following conditions:

1. Permission must be obtained from the Instructor and submitted to the Registrar during registration period, no later than the last day of add/drop.
2. All established charges for the course must be paid.
3. Priority in registration will be given to students who are registering in the course for credit.
4. Audit courses will be reflected on student's permanent record as AUD.

COLLEGE WITHDRAWAL

Students wishing to officially withdraw from the College during a semester must complete a College Withdrawal form, which may be obtained in the Dean of Students' Office. At this time an exit interview will be conducted and a check will be made to ensure that all financial obligations to the College have been met. Each semester there is a deadline for withdrawal.

A student who does not complete a semester and has not officially withdrawn from a course or courses will receive a letter grade of "F." To remove this letter grade, the student must petition the instructor to initiate a request for a grade change to Withdrawal. The decision of the instructor will be final. If the instructor cannot reasonably be reached, the request shall be submitted to the faculty of the appropriate academic department for a decision.

The decision will be based on documented evidence of extenuating circumstances provided by the student seeking the grade change. If the instructor or the appropriate department members deem a change to "W" is appropriate, the normal grade change procedure will be followed. Forms may be obtained by the instructor from the Registrar's Office.

ACADEMIC HONORS

DEAN'S LIST

In order to recognize above-average academic performance, a Dean's List is published each semester. Any student carrying 12 or more semester hours who

earns a 3.3 quality point average is placed on the Dean's List, providing that student has no grade less than a "C" in that semester.

PHI THETA KAPPA HONOR SOCIETY

The Alpha Psi Sigma chapter of the international honor society for two-year colleges offers membership to any student who has earned 30 graduation credits with a quality point average of 3.5. Phi Theta Kappa emphasizes leadership, scholarship, fellowship, and community service. There is a \$40 one-time membership fee.

AWARDS

At the Honors Convocation held prior to Commencement, Outstanding Academic Achievement awards are given to graduating seniors who have achieved a 4.0 Quality Point Average. Other awards and scholarships are given to those students whose academic records in their departments are outstanding, and to those who have contributed significantly to the total College community through their co-curricular participation. Besides awards by the academic departments and divisions, College-wide scholarships and awards include:

- Alumni Association Scholarships
- Athletic Excellence Awards
- Edmond P. Garvey Award
- Ernest J. Henderson Scholarship
- Higher Education Coordinating Council Scholarships
- Honors Program Certificates
- Joseph J. Cooligan Award
- Joseph J. Deliso, Sr. Scholarships
- Lucille Goodson Parks Award
- Minority Talent Roster for Outstanding Minority Community College Graduates
- STCC Scholarships
- Tazzini Family Scholarship
- Teresina B. Thompson Award
- Who's Who Among Students in American Junior Colleges

COMMENCEMENT HONORS

Academic honors are bestowed on those students at Commencement who have distinguished themselves academically at the College. In order to receive honors, a student must have a minimum of 30 semester hours in residency prior to Commencement and have achieved the following cumulative quality point average: *Honors*—3.3 to 3.69; *High Honors*—3.7 to 3.89; and *Highest Honors*—3.9 to 4.0.

Student Information and Services

SERVICES AND RESOURCES

ACADEMIC COMPUTING SERVICES

STCC is pleased to provide its students with exceptional and modern academic computing services. There are nearly 300 work stations in 16 computer labs throughout the campus, with IBM and Macintosh microcomputers. STCC is the only college in the area with two IBM AS/400 minicomputer/mainframes dedicated to academic use. These as well as five RS/ 6000 engineering work stations were donated by IBM through STCC's partnership in the CIM in Higher Education Alliance. Staff are readily available in the computer labs to answer questions and assist students in their use of the College's computers. As the use of computers grows, we are making every effort to meet the needs of our student body. Campus buildings are connected by fiber optic cable through ethernet or token-ring networks. As part of a National Science Foundation grant, the College has direct access to the Internet.

ART GALLERY

The STCC Art Gallery, located on the first floor of Building 27, is open Monday through Friday, 12:00 noon to 4:00 p.m. throughout the academic year. Directed by Art Department faculty member Larry Slezak, the Gallery presents approximately seven exhibits each year, featuring works by artists of local and national repute, as well as STCC student work.

ATHLETICS

Inter-Collegiate Athletics are an integral and prominent part of STCC's educational objectives. Sports are seen as vital and beneficial activities. STCC is a member in good standing of the NJCAA and MCCAC.

There are currently nine inter-collegiate or club sports teams at STCC, including Men's tennis, soccer, basketball, baseball and golf along with Women's tennis, soccer, basketball, and softball.

Intra-mural and recreational activities are geared to the desires of the student population. In the past, intra-mural and recreational activities have included flag football, basketball, bowling, softball, floor hockey, and volleyball.

Scibelli Hall contains a gymnasium, locker rooms, and an outstanding weight training facility. In the lower level, there are free weights as well as machines, for beginners and experienced lifters. Open hours are posted at the beginning of each semester.

The intra-mural and recreational desires of the student body are assessed on a periodic basis so that these programs can change offerings as interests change.

BOOKSTORE

The college bookstore, located on the first floor of Building 27, is open every school day from 8:00 a.m. to 4:00 p.m. It is also open evenings during the first two weeks of the semester for the convenience of Continuing Education students.

Books, school supplies, equipment for course work, as well as miscellaneous items are offered for sale. In addition, students can purchase their class rings, and arrange for magazine subscriptions at discount prices. Used books are also offered at discount prices, and new and used books can be sold back throughout the year.

CAREER SERVICES

Career Services offers employment assistance to both graduating students and alumni at each step in the career search process. From setting goals to securing employment, resources are available to help launch a successful career.

During the course of their academic programs, students are encouraged to seek assistance in career planning. Counseling is provided to help choose, change, or confirm career goals in conjunction with academic advisors and the Counseling Center. Once a career goal is established, students work toward securing a position. Guidance in writing cover letters and resumes and in developing interview skills necessary to the job search is available to students and alumni.

Current employment listings are available on a year-round basis covering both the public and private sectors. Job postings from state and local government as well as locally- and nationally-based companies are accessible through this office. On- and off-campus interviewing is arranged to accommodate the needs of area employers and graduating students. A Career Resource Center, dedicated to serving the needs of students and alumni, is open throughout the academic year and during the summer. Complete with resource materials, the center contains a variety of information to assist in the career search process.

All graduating students are required to register with Career Services during their final semester by completing a Career Placement registration form. By doing so, students are eligible to participate in on- and off-campus company recruitment and other career placement activities. To activate his or her file during a job search, a graduate should contact this office.

The Office of Cooperative Education/Career Services also maintains a record of summer/general employment opportunities. All students are invited to utilize this resource throughout the year. This office is located on the second floor of Building 27.

COUNSELING CENTER

The Counseling Center is a student-oriented, supportive environment where you may go to receive career, academic, and/or personal counseling and related services, as well as referral services to community agencies, when appropriate. While appointments are recommended, students in crisis are seen immediately without an appointment.

Philosophy

The Counseling Center's primary mission is to assist students to explore, define, and accomplish personal, academic, and career goals. We believe in the dignity, worth, potential, and uniqueness of every individual and his or her ability to be self-directed. We are dedicated to the enhancement of the spirit and quality of life of each member of the College community. We translate these beliefs into action through providing high quality individual and group counseling services, programming focused on the developmental needs of College students, and consultative services to assist faculty and staff.

Overview of Services

- Educational counseling
- Career counseling
- Drug and alcohol counseling
- Personal counseling
- Advocacy/referral
- Consultation with faculty

Workshops/classroom presentations

Study skills/memory techniques

Career planning/promoting gender equity

Stress management

Controlling anxiety through biofeedback training

Coping with test/math anxiety

Support groups

Single parents

Gay/Lesbian/Bisexual support group

A support group for recovering alcoholics/substance abusers

Career Counseling

Career Counseling/Career and Life Planning, which is offered free of charge to enrolled students, is part of a developmental process. It can appropriately occur at any point throughout a student's education. Its major tasks include self-assessment, career exploration, and decision-making. Specific components of these tasks include:

- a.) Interests, aptitude, personality, and value assessment through interviews, psychological tests, and exercises
- b.) Needs assessment related to work satisfaction
- c.) Skills identification/determination of work-related skills
- d.) Values clarification through tests and exercises
- e.) Career exploration utilizing computer software, career reference books, Counseling Center fact sheets, and diverse resources for occupational information
- f.) Decision-making related to:
 - 1.) appropriate career choice
 - 2.) appropriate educational program
- g.) Implementation of career choice through:
 - 1.) application/acceptance into appropriate College program
 - 2.) support services, if necessary, until successful completion of educational objectives/graduation

Career Planning Resources

Important career planning resources include:

Career and Catalog Library

- a.) Computer software related to career planning and decision-making
- b.) Extensive occupational information, which helps ensure that students make an informed career choice

System for Interactive Guidance Information Plus:

SIGI+ ("Siggy Plus") is a state-of-the-art, computer-based, highly-interactive career guidance system. Students can reserve time by calling the Counseling Center secretary, Dolly Oppen, at extension 3884, or stop by to arrange an appointment.

While it is possible to spend several hours using SIGI, we recommend that the student break this up into individual two-hour sessions, each followed by a meeting with a career counselor.

Overview of SIGI Plus

The System of Interactive Guidance Information helps people with the process of making career decisions and plans. You may use SIGI+ to:

- figure out what you want and what you can afford
- get the facts about occupations
- put the pieces together to be a wise decision-maker.

SIGI+ can help, but it can't do everything:

- SIGI+ doesn't give you one simple answer
- SIGI+ doesn't make your decisions for you
- SIGI+ can't go out and hunt for your next job

SIGI+ has eight sections. Each one is an important step in the career decision-making process. Many people find it helpful to use all the sections in order, but you can also go directly to any section to answer your immediate questions. Here's what you can do in the eight sections of SIGI+:

- SELF ASSESSMENT find out more about yourself
- SEARCH make lists of occupations to explore
- INFORMATION get the facts on any occupation in SIGI+
- SKILLS see what skills each occupation requires
- PREPARING see how to prepare for each occupation
- COPING get help with practical problems
- DECIDING decide which occupation is your best choice
- NEXT STEPS make plans to get yourself started

Career Interests Tests/Exercises

The Career Assessment Inventory, MBTI, the Strong Interest Inventory, and other interest surveys are available in the Counseling Center at no charge to students. Each counselor can administer and interpret the instrument which seems most appropriate for the individual. A great diversity of career planning exercises are also available related to personality, interest, needs, skills, values, career exploration, and career decision-making.

Educational Counseling

Academic Advisement—the Counseling Center is knowledgeable regarding each program in the College and can advise students on course selections and intracollege transfer requirements and procedures.

Academic Assistance—The Counseling Center assists students in developing appropriate study skills through workshops and individual counseling. When students are experiencing academic difficulties, the Counseling Center may also play a role in bringing student and instructor together to help resolve academic and interpersonal difficulties.

Personal Counseling

Supportive Counseling—Counselors are available to offer supportive counseling to students experiencing difficulty in their academic work due to personal crises or circumstances which are causing anxiety and stress. Counselors provide a structured setting in which students find assistance and support in dealing with the problems they are experiencing.

Referral to outside agencies—Students exhibiting withdrawal, disruptive behavior, extreme nervousness, or other unusual behaviors, may have severe emotional problems which require long-term therapy. In such cases, students are referred to community or private agencies for evaluation and follow-up. Counselors maintain relationships with community mental health professionals in order to make the referral process easy for STCC students.

Psychological consultant—A consulting psychologist works with the Counseling Center staff throughout the academic year, providing case consultation, in-service training, and emergency consultation services.

Workshops and Courses—Counselors will be presenting a series of workshops over the year to promote academic and personal growth. Times and places for these workshops will be listed in *The Ram* or *STCCler*, and posted in all buildings. Some topics of these workshops are Study Skills, Coping with Math Anxiety, Overcoming Test Anxiety, Career Decision-Making, SIGI Plus: Systematic Career Planning by Computer, and Overcoming Self-Defeating Behaviors.

Confidentiality and Its Limits

Underlying the counseling relationship is the principle of confidentiality. This principle assures you that the facts and opinions you reveal about yourself in the course of counseling will be held strictly private, and will not be revealed to others without your prior written permission.

However, there are several exceptions to this principle of which you need to be aware. The exceptions include:

professional consultation

child abuse/neglect

elder abuse/neglect

threatening to harm yourself

threatening to cause physical

violence to another

information related to the planned

commission of a crime

Legal cases related to:

child custody

hospitalization

court-ordered evaluations

Please discuss with your counselor. More extensive written materials are available upon request, including the state regulations. Also see page 60 for more information.

DAY CARE CENTER

Armory Square Day Care, Inc. is a private, non-profit day care center operating on the campus of STCC. The center opened in the fall of 1984, to serve the children of students, faculty, and staff at STCC. Located in Building 20, the center is licensed to accommodate up to 40 children, from ages 2 years 9 months to 5 years, during the academic year. Children must be toilet-trained. The center also runs a full-day kindergarten program for children ranging in age from 5 years to 7 years. Breakfast, lunch, and a snack are served. The center plans to move to Building 11 with an expanded program to include infants and toddlers.

The Armory Square Day Care program is based on the belief that young children learn through play. The center provides a variety of experiences designed to build the child's self-esteem and develop social skills. The telephone number is 737-3455, or 781-7822 extension 3632. The Day Care office is located in 20/221.

OFFICE OF DISABILITY SERVICES

The College provides support services and academic accommodations for any student who has a physical, emotional, and/or learning disability. Any full- or part-time day or evening student with a documented disability is eligible for services. Academic accommodations provide the students with a disability equal access to programs and services at STCC. Accommodations are designed to meet specific needs of the students. Counselors work in coordination with faculty and vocational rehabilitation agencies. Some specialized equipment is available for loan.

Learning Disabilities

A Counselor for Students with Learning Disabilities is available on a part-time basis. If a student is experiencing extreme difficulty in reading, comprehending, or processing information, a learning disability may exist. The Counselor for Students with Learning Disabilities will as necessary offer students direct assistance, refer for evaluation and testing to determine the nature of the learning problem and strategies for improvement, and work with faculty and students in modification of teaching and learning methods to promote student success.

Adaptive Computer Lab

The purpose of the Adaptive Computer Technology Lab on campus is to provide equal access to computing for students with disabilities who can benefit from current technological advances. The lab is staffed by tutors and is available for use by any student with a disability who has completed an orientation to the equipment. The lab is equipped with a book scanner, speech synthesizers, a speech recognition system, closed circuit television, and various adaptive software programs.

Project SCORE

Project SCORE (Students Creating Optimal Resources for Employment) is a project funded by the United States Department of Education. The project was developed to enhance employment experiences and placement opportunities for students with disabilities. Project activities include courses in career planning and job search skills as well as individualized assistance in refining employability skills, job search strategies, resume writing, and interviewing.

The Office for Students with Disabilities, Project SCORE, and the Adaptive Computer Lab are located in Building 27 on the second floor. For information and referrals, call extension 3884.

HEALTH SERVICE

Every student while on campus may seek the counsel and professional advice of the college nurse whose office is in Building 16 Room 105. The nurse is on duty every school day from 8 a.m. until 4 p.m. Her extension is 3510. In case of any emergency, the number to call is 3911. The nurse or security will respond and decide whether it is necessary to call an ambulance. A physician is available on campus either on a walk-in basis or by appointment, on Monday, Tuesday, Thursday, and Friday from 11:00 a.m. to 11:45 a.m.

HOUSING

Since the overwhelming majority of our students commute, the College does not operate dormitories. However, a current list of apartments and rooms available in private homes is maintained for students whose permanent residence is at a distance. The College does not inspect, supervise, or recommend student housing facilities. Housing arrangements are the sole responsibility of the student. The Dean of Students' Office will assist students who have not been able to make suitable arrangements from the current housing list, which is available on request.

THE LIBRARY

STCC's library is located in Building 27 (along Federal St.), directly across the lobby from the college bookstore. During the fall and spring semesters, it is open from 7:30 a.m. to 9:00 p.m. Monday through Thursday, and 7:30 a.m. to 5:00 p.m. on Friday, as well as 9:00 a.m. to 1:00 p.m. on Saturday. The library is closed on legal holidays; summer and vacation hours may vary. All students enrolled part- or full-time in both day and evening divisions are entitled to use the library's resources and services, including the on-line catalog, FALCON.

Print Materials:

The library's print collection contains over 59,000 books, 450 journals 17,000 pamphlets and documents, newspapers from surrounding major metropolitan areas, catalogs of colleges throughout the U.S., current fiction and non-fiction paperbacks, and children/young adult books. The selection of journals includes a number of popular magazines in addition to a wide variety of specialized publications covering all fields in the STCC curricula. Magazines and reference books — including encyclopedias, atlases, almanacs, catalogs, indexes, and directories — must be used in the library. All other books and pamphlets may be charged out with a valid STCC I.D.

Career Center:

Situated across from the reference desk, the library's Career Center offers materials on a wide variety of occupations. Brochures, industry profiles, career handbooks, resume/cover letter guides, and job hunting manuals comprise the bulk of this collection — much of which is available for loan.

Audiovisual Materials:

The library maintains a large audiovisual collection, including audiocassettes, compact discs, film formats, records, slides, videocassettes, and videodiscs. Fully-equipped AV rooms for individual and small group use are located on the first floor of the library. Staff are available to facilitate equipment use. Many AV materials, though not all, may be charged out of the library just like books.

Circulation:

All library materials are charged out and returned at the circulation desk. Items placed on "Room Reserve" by faculty are located here as well. A valid student ID card is necessary in order to sign out materials.

For convenience, there is a book drop outside Building 27 where materials may be returned when the library is closed. Audiovisual materials **must** be returned directly to the library.

Reference:

A reference librarian is available to assist students with locating materials or information for class assignments or personal use. There is a wealth of resources in the library, and CD-ROM databases as well as FALCON, the on-line catalog, provide easy access to additional materials locally, regionally, and nationally. Please ask at the reference desk for more information about these new services. Interlibrary loan services are also available.

Cooperative Borrowing:

CLGS (Cooperating Libraries of Greater Springfield) — Through an agreement among the colleges in the Greater Springfield area, any STCC student may use the other college libraries by presenting a valid STCC ID. The participating institutions are: American International College, Bay Path College, Elms College, Holyoke Community College, Springfield College, Western New England College and Law School, and Westfield State College. Springfield City Library and Baystate Medical Center Library are also included in the group. As a result of CLGS, many additional resources are available. When using other area libraries, students are subject to their policies and regulations concerning loan periods and possible penalties for overdue materials.

C/W MARS (Central/Western Massachusetts Automated Resource Sharing) — STCC participates in C/W MARS, a computer network of over 60 academic, public and special libraries, which brings its members automated circulation and interlibrary loan systems. As a result of the library's participation in this network, the STCC community has access to over 4 million books and other library materials previously unavailable to the college community.

Other — Students may use the resources of all Massachusetts public college and university libraries by presenting a valid STCC ID. If a student needs a book which is unavailable in the Greater Springfield area or at the University of Massachusetts, the book can be borrowed by mail through interlibrary loan. All requests for these loans are handled at the reference desk.

Miscellaneous

Within the library are other facilities which students may wish to use. These include a copy machine which costs 10¢ per page (7¢ with a copy card), and a microfiche copier which costs 10¢ per page.

MESSAGES

In the event of an off-campus emergency requiring the attention of a student, efforts will be made by the Dean of Students' Office to contact the student. Call the Dean's Office at 781-7822, extension 3454.

Only emergency messages can be relayed to students. The College does not have a public address system. Only a serious emergency can justify interrupting a class. If a student is not in the class, it is impossible to locate and notify the student.

PARKING

Each year the College attempts to secure a maximum number of parking spaces in the general area of the campus for student parking, and in September the College publishes an updated list of independent parking areas located in the general vicinity of the campus. Parking spaces in many of these lots are controlled by the College, and parking permits are available for a reasonable fee from the Security Office. There is sufficient parking available on these lots for all students of the College. It should be noted also that, because the College is located on a National Historic Site, there are many areas on the campus where parking is not allowed; however, peripheral lots are located within easy walking distance of the classroom buildings.

STUDENT ACTIVITIES

The Student Activities program is designed to complement the academic program by providing a variety of meaningful educational, cultural, and social experiences. The Student Activities Center assists students and faculty in the planning of co-curricular programs and in the development of student organizations. The staff of the Student Activities Center, with student leaders, provides support to special planning groups and interested students in the promotion of activities on campus. Additionally, access to off-campus events and attractions is available through discount ticket sales and bus trips.

Whenever the College is closed, due to weather conditions or an emergency situation, all extra-curricular activities are automatically cancelled to ensure the safety of students and others.

The Student Community Council is the forum through which students' viewpoints, concerns and input into campus governance are presented. Most of the positions are filled by student volunteers who are interesting in gaining valuable experience while improving campus life. A student body president, student trustee, and select-person positions are elected in April to fill one-year terms. Nomination papers are available in March for interested students. Requirements vary for these positions.

Specific information on student activities can be found in the STCC student handbook.

WOMEN'S CENTER

The Women's Center at STCC is the place where non-traditional students can find peer support, encouragement toward academic success, and an extensive referral network that will facilitate a student's adjustment to college and its challenges. All re-entry students are encouraged to use the Center as a place to share information, concerns, and experiences. Located in Building 20, adjacent to the cafeteria, the Women's Center can be the bridge between college, work, home, and family for non-traditional students. The telephone number is 781-7822, extension 3134.

POLICIES AND PROCEDURES

STUDENT RIGHTS AND RESPONSIBILITIES

This statement of rights and responsibilities is designed to clarify those rights which the student may expect to enjoy as a member of the student body of the College, and the obligations which admission to the College places upon the student.

GOAL

To provide an atmosphere where solid intellectual and academic development is provided.

OBJECTIVES

A. Student Responsibilities

1. To be knowledgeable of and comply with the directives, regulations, and laws as established by the Massachusetts Higher Education Coordinating Council, Springfield Technical Community College Board of Trustees, the College administration and the Student Community Council.
2. To respect the rights of individuals and groups to independent action as long as those rights do not interfere with the parallel rights of others — minorities and majorities alike — including the avoidance of action interfering with those educational processes under the auspices of the College.
3. To be knowledgeable of and comply with the directives, regulations, and laws of duly constituted civil authorities.

B. Student Rights

1. To have the opportunity to pursue higher education.
2. To have the freedom to exercise the rights of citizenship, association, inquiry, and expression.
3. To have the right of privacy and confidentiality.
4. To have the right of voting representation on all recommendations to the President of the College on matters of concern, including but not limited to, academic standards, student services, and curriculum changes.
5. To have the right of quality education, including but not limited to:
 - a. The right to competent instruction in courses and programs offered by the College.
 - b. The right to assistance in overcoming educational, cultural, emotional and economic disadvantages which hinder the educational process.
 - c. The right to receive in writing from each faculty member during the first week of classes of every semester, a brief, written course description and outline of the material to be covered, course requirements including a specific list of information and techniques which the student is expected to acquire, attendance policy, and the grading system to be utilized.
6. To have the right to fair and equal treatment, including but not limited to instruction, evaluation, and services by faculty, staff, students, and administrators.
7. To have the right to procedural due process in grievance and disciplinary hearings.

Approved by the Springfield Technical Community College Board of Trustees, May 29, 1984.

ACADEMIC HONESTY POLICY

Communication of knowledge and a free exchange of ideas, two essential aspects of a college community, require a fundamental standard of honesty. Students and faculty must be able to expect that thought and work presented for the class are the property of the person claiming credit for them. To safeguard these principles, it is important to clarify the rules and procedures regarding academic honesty.

1. Students must refrain from all forms of academic dishonesty including cheating on quizzes and examinations, abetting others in cheating, appropriating other students' work, and plagiarizing written assignments.
2. Faculty who find students in violation of honesty standards shall determine the appropriate response. Punishment may include dismissal and/or a failing grade in the course.
3. Faculty will report incidents of academic dishonesty and the action taken in response to them **in writing** to the Dean of Student Services.
4. The Dean of Student Services may elect to pursue further action up to and including dismissal from the College.
5. Students who believe themselves to be unjustly accused or punished for academic honesty violations may pursue the matter through the grievance procedure outlined on the following pages.

STUDENT CODE OF CONDUCT

The College assumes that its students will behave in such a way that will reflect creditably upon their homes, family, College and community. To help provide an orderly atmosphere to nurture student development, certain regulations and policies have been developed over the years. The College further assumes that all students will abide by these regulations and policies. Violations of established College policy may result in disciplinary action up to and including suspension from the College.

The following is not an all-inclusive list of prohibited actions, but will serve as a guideline.

1. Academic dishonesty — such as plagiarism, cheating, use of unauthorized books or notes, knowingly furnishing false information, unauthorized reading, removing, duplicating, photographing, misuse of any college file, document, or record of any faculty, administrator, staff or student.
2. Alteration of college records, documents, or identification instruments or the use of the same with the intent to defraud.
3. The possession or use of narcotics and dangerous drugs as defined by the laws of the Commonwealth of Massachusetts is prohibited on campus and at all college-sponsored off-campus activities. The use or possession of alcoholic beverages is restricted by the Massachusetts Higher Education Coordinating Council to special social events.
4. Intentional obstruction or disruption of normal college conduct, functions, processes, routines, college activities on or off campus, or activities of those invited to the campus for any purpose.
5. Physical or verbal abuse or misuse of persons or property on campus or at college-approved off-campus activities.

6. Theft, or unauthorized use or possession of any property (including keys, files, documents, library materials, etc.) owned, leased, or maintained by the College or by persons on the campus.
7. Weapons, firearms, explosives — possession, sale, or use of any weapon, firearm, explosive, or explosive device including fireworks.
8. Failure to comply with directions of college faculty, staff and administration acting in the performance of their duties.
9. Violations of published college regulations including parking, motor vehicle movement, use of college buildings or equipment and any other regulations which may from time to time be enacted.

DISRUPTIVE BEHAVIOR

Behavior which disrupts the establishment or maintenance of the learning environment may result in the student causing the behavior being excluded from the classroom by the instructor; the student may be subject to further punitive action by the Dean of Student Services.

The disruptive student has a right:

1. to be clearly informed in writing of the problem or behavior in question;
2. to have a clear understanding of the consequences of not modifying the condition or behavior; and
3. to have an opportunity to modify the condition or behavior.

SPRINGFIELD TECHNICAL COMMUNITY COLLEGE STUDENT GRIEVANCE PROCEDURE

If a student has a grievance relating to college policy, procedure personnel, or student rights, the student may follow this grievance procedure. If assistance is needed with the process, the student may contact the Dean of Student Services' Office, and help will be provided.

1. Definitions

"Complaint:" The informal, often unwritten stage of an allegation of mistreatment.

A "grievance:" A written complaint filed by a student with the person designated by the President as Student Grievance Officer specifically alleging discrimination or an abridgement of his/her rights as a student.

"Student Grievance Officer:" A College employee assigned responsibility for administering the student grievance procedure, including the maintenance of specified records. At STCC, the Dean of Student Services has been assigned this responsibility. In case of grievance against the Dean, the President shall designate another College official to act as the Student Grievance Officer.

"Grievant:" The student or students filing the grievance. The grievant must have been a registered student of the College at the time of the alleged mistreatment.

2. Purpose

The primary purpose of this procedure is to secure prompt and equitable resolution of student complaints and grievances. Grievances properly filed in this forum include, but are not limited to, matters arising under federal and state laws prohibiting discriminatory educational practices. Customary channels of

communication shall be used wherever feasible, in seeking clarification of questions of concern before the grievance procedure is utilized. Every effort shall be made to maintain confidentiality at each level of this procedure.

3. *Time*

The number of days indicated at each level shall be considered as a maximum. Every effort shall be made to expedite the process. Nevertheless, the specified time limits may be extended in extenuating circumstances by the immediate supervisor of the person against whom the grievance is directed, the President or his/her designee, or by mutual consent of the grievant and the person against whom the grievance is directed, provided that such extensions shall be confirmed in writing.

4. *Procedure*

Level One — Informal Procedures

Customary channels of communications shall be used in seeking clarification of questions of concern and in resolving complaints before the formal procedure is used. This is the informal stage where most complaints are resolved. For example, a student who has a complaint regarding a classroom incident customarily notifies the faculty member, and then the Dean of that division. The student may consult with the Student Grievance Officer, William Manzi, Dean of Student Services, at any time prior to or during the grievance procedure, and must consult with him prior to filing any written complaint.

Step One — Except in cases of alleged physical assault or sexual harassment, the grievant shall first present the grievance orally and informally to the person against whom a grievance exists. This should be done in a reasonable period of time, within thirty (30) calendar days from the date that the Grievant knew or should have known of the grievable act or inaction. An individual who believes that he/she is the victim of sexual harassment or physical assault may initiate his/her complaint at Level One, Step Three, i.e., with the immediate supervisor of the person against whom the complaint exists, not later than thirty (30) calendar days following the instructional period when the alleged incident occurred.

Step Two — If the complaint is not resolved within ten (10) calendar days after the notice of the Step One complaint, the grievant may within ten (10) calendar days present in writing the allegations and known facts to the person being grieved. A complaint filed at this level should specifically state that it is filed at Level One, Step Two. The grievant shall also date the document, retain a copy, and hand deliver or send it by certified mail. The person against whom the complaint is directed shall forward a written Step Two response, if any, to the student within seven (7) calendar days from receipt.

Step Three — If the complaint is not resolved within seven (7) calendar days after receipt of the Step Two response or if no written response is issued, the grievant may present it in writing to the supervisor of the person against whom the grievance is directed, with a copy to the Vice President of the area of the person(s) against whom the grievance is directed. The supervisor shall investigate the complaint, and after conferring with the appropriate Vice President, shall forward his/her written decision to the grievant and to the person being grieved within seven (7) calendar days.

Level Two: Formal Procedures

Step One — Student Grievance Committee — If the complaint is not resolved within the period allowed at Level One, Step Three, the grievant may present a formal grievance, in writing, including a statement of the charges, and all supporting statements and evidence, to the Student Grievance Officer within ten (10) calendar days after receipt of the supervisor's decision. The Student Grievance Officer shall arrange a meeting of the Student Grievance Committee within fourteen (14) calendar days following receipt of the grievance, and shall provide a copy of all written supporting statements and evidence presented at the lower steps to each member of the committee at least twenty four (24) hours prior to the hearing. The committee shall render its findings and any recommendations within seven (7) calendar days.

Membership of the College Student Grievance Committee

The committee shall consist of five members:

- 1 — classified employee
- 1 — administrator
- 1 — faculty/staff unit
- 1 — student

The fifth member shall be from the same identifiable group as the person being grieved. Members shall be appointed by the President. In cases of discrimination as they apply to applicable federal or state anti-discrimination laws, the Affirmative Action Officer shall be a non-voting committee member. The Student Grievance Officer shall be a non-voting committee member, attend all meetings, and maintain confidentiality of meetings.

Rules for Committee Hearings

The rules governing hearings before the College Student Grievance Committee are available in Dean Manzi's office.

Step Two — Within thirty (30) calendar days after the grievance committee issues its findings and recommendations, the President or designee shall evaluate all the evidence and make a decision, in writing, to all concerned parties. At the President's or designee's discretion, a hearing may be conducted prior to rendering a decision. This hearing shall be closed, with the grievant and person(s) grieved invited, and each may bring a representative. The decision of the President or designee shall be final and binding on all parties.

5. Grade Appeals

Complaints or grievances filed in connection with assigned grades represent a special case within the grievance procedure. Grading reflects careful and deliberate assessment of a student's performance by the instructing professional. As such decisions are necessarily judgmental, the substance of these decisions may not be delegated to the grievance process. Nevertheless, the College recognizes that in rare cases the process of grading may be subject to error or injustice.

Except as otherwise provided by a separate grade appeals procedure for clinical programs as approved by the President of the College, a student who alleges an error or injustice in the grading process may employ the grievance procedures described in Level One, Steps One through Three, above; provided that the appropriate Dean for these purposes shall be the Executive Vice President/Academic Dean. No complaint challenging a grade may be initiated later than

thirty (30) calendar days following the last day of the instructional period for which the grade was granted. If the faculty member who assigned the grade is no longer employed by the College or not available, the complaint may be initiated with the appropriate Dean. If substantial evidence of error exists, the grade may be remanded to the instructor for reassessment. If the instructor is unavailable, the grade shall be reassessed by the appropriate Dean or designee.

6. Hearings and Decisions

At each of the above levels, the grievant and the person being grieved shall be afforded the opportunity to be present and be heard. In addition, each party may present, examine, and cross examine witnesses. All decisions and/or recommendations at each level must be in writing, with the exception of Level One — Steps One and Two, and shall include supporting reasons with copies to both parties.

7. Rights of Persons Being Grieved

If recommendations result in sanctions against College employees, these measures shall be regarded as administrative actions subject to all conditions of applicable collective bargaining agreements and College and/or Higher Education Coordinating Council personnel policies.

8. Alternative Forums

Filing a grievance in accordance with the procedures herein detailed in no way abrogates the student's right to file complaints with the appropriate state and federal agencies or with the court. However, once the grievant initiates proceedings in any other forum, his/her rights to proceed under the student grievance procedures are waived.

For purposes of filing federal level charges of discrimination, the student may contact the College Director of Affirmative Action, Myra Smith, in Garvey Hall, Room 245, extension 3833.

9. Withdrawal

Students may withdraw their informal or formal complaints at any time. Withdrawal may be accomplished in writing or by oral agreement confirmed in writing.

10. Reprisals

The College shall not interfere, restrain, or coerce any student in the exercise of his/her rights under this grievance procedure and/or his/her participation in any grievance proceedings.

POLICY OF CONFIDENTIALITY OF STUDENT RECORDS

Educational Records

The Family Educational Rights and Privacy Acts 1974, as amended, provides for students to have access to their educational records, to challenge anything in the records which they consider inaccurate or misleading, and to limit the release of such information.

In compliance with the law, the College has established a policy to protect students from misuse of information. The policy is summarized as follows:

1. Directory Information will include (1) name, (2) address, (3) confirmation of date of graduation and certificate/degree received. Students may withhold their Directory Information by notifying the Dean of Student Services in writing.
2. Authorized personnel may have limited access to student records for (1) internal educational purposes, (2) routine administrative and statistical purposes, or (3) legitimate inquiries made to review a student's background information in order to adequately instruct and advise the student in a specific academic area.
3. A record log or audit trail will be kept for all students showing the student's records. No record of access need be kept if the obtained information is considered directory information, is required for normal clerical maintenance of a file, or is seen by authorized personnel in the normal performance of their responsibilities.
4. No records will be released to anyone without the formal written consent of the student concerned. A student will be notified whenever a court subpoena has the records.
5. Students may have general access to their records and the right to challenge records they believe to be inaccurate, incomplete, or misleading, or otherwise in violation of their privacy.

Counseling Records

Counseling records are distinctly different from educational records, and access is limited. As mandated by state and federal law and by the ethics of the counseling profession, information shared by a student in counseling is strictly confidential and will not be disclosed without a student's prior written consent. Knowing that what they share will not be disclosed without their permission, students can safely discuss their concerns in a highly supportive environment.

When appropriate, counselors encourage students to share information with the faculty, or sign a release form allowing the counselor to share information, related to any disability or medical problem which might have an impact on the learning process. Counselors work with both students and faculty members in providing adaptive equipment and other learning support services.

Exceptions to the rule of confidentiality do exist, however, in which a counselor would share information with appropriate individuals or agencies without a student's permission. These exceptions include:

professional consultation	legal cases related to:
child or elder abuse /neglect	child custody
threatening to harm yourself	hospitalization
threatening to cause physical	court-ordered evaluation
violence to another	
information related to the	
planned commission of a crime	

Please feel free to discuss confidentiality with your counselor. More extensive written materials related to confidentiality are available upon request in the Counseling Center.

Medical Records

Medical records like counseling records, are distinctly different from educational records and are considered strictly confidential; they may not be disclosed by the nurse without a student's prior written consent. While students are generally encouraged to make faculty aware of any medical problem which might significantly affect the learning process, their right to keep this information confidential is protected by state and federal law. However, there is one notable exception to this rule: if it becomes necessary to share information to protect the welfare of the individual or the community, e.g., when communicable diseases are involved, confidentiality is waived.

Division of Continuing Education

Through the Division of Continuing Education (evening, weekend and summer school), the College meets a wide variety of community educational and training needs. Programs of study are offered on a year-round basis with the fall and spring semester dates closely paralleling those of the Day Division. All courses offered during the summer, whether during day or evening hours, are operated by the Division of Continuing Education.

The Division of continuing Education is designed to meet the needs of the community for higher education, while operating on a self-sustaining basis in accordance with the General Laws of the Commonwealth. The Division of Continuing Education provides:

1. Credit courses in both general and specialized educational fields;
2. The opportunity to earn an associate degree or certificate in a wide range of programs;
3. Access to College courses at numerous extension centers for students who may not have convenient access to the Springfield campus.

Offerings are designed to furnish opportunities to: (1) resident students of Springfield Technical Community College to supplement their work in the day division of the College by taking additional elective courses; (2) students of other colleges and universities to take courses for credit, transferable to their resident college; (3) high school students who wish to remove academic deficiencies before entering college in September; and (4) regional adult students who wish to update career skills, pursue a new career, or gain experience in a subject of specialized interest.

Credit courses in the following degree or certificate of completion programs are offered by the Division of Continuing Education. Some individual courses are available only through the Division of Continuing Education.

Degree Programs

Business Administration

- Accounting

- Management

- Marketing

- General Business

- General Business/Transfer Compact Option

- Materials Management Option

Computer Information Systems/Data Processing
Cosmetology Management
Early Childhood Education
Electrical/Robotics Technology
Energy Systems Technology
General Studies
 University Without Walls Option
Law Enforcement/Criminal Justice
Liberal Arts Transfer
Mechanical Engineering Technology
 Computer Integrated Manufacturing (CIM)
 Computer Aided Drafting/Computer Aided Manufacturing (CAD/CAM)

Certificate of Completion Programs

Accounting
Architectural Technology
Computer-Aided Drafting and Design
Computer-Aided Manufacturing
Data Processing
Electrical/Robotics
Electronic Systems
Fire Science
Heating/Ventilation/Air Conditioning
Graphic Arts Technology
Materials Management (APICS)
Medical Coding
Microcomputer Specialist
Water/Wastewater Treatment
Word Processing

Center for Business and Technology

The Western Massachusetts Center for Business and Technology (WMCBT) channels the resources of STCC's faculty and staff to deliver consulting services and management development training programs and computer workshops for employees of business and industry in Western Massachusetts.

The WMCBT provides:

- customized training programs to introduce potential applications of new technology
- consulting services in the areas of manufacturing processes, management development, and information technology
- training programs to enhance the skills of managers and supervisors to allow effective functioning within new technological and organizational environments, and
- opportunities for company personnel to assess the cost-effectiveness and feasibility of integrating new equipment into the production process

Regardless of company size, the Center for Business and Technology's professional staff will work with company representatives to design a relevant and cost-effective training program for employees. The WMCBT is pleased to have

provided a diverse range of training programs for employees of many companies throughout the Pioneer Valley.

WMCBT is a member of the CIM in Higher Education Alliance, and serves as a demonstration site and authorized training center for the latest technical innovations in software tools for product design and manufacturing, including CADKey, SmartCAM, Costimator, and IBM CIM including MAPICS/DB software.

Curricula of the College

BUSINESS

BUSINESS ADMINISTRATION

- Accounting

- Finance

- General Business

 - Option: Transfer Compact

- Management

 - Option: Small Business Management

- Marketing

COMPUTER INFORMATION SYSTEMS

- Computer Information Systems/Data Processing

 - Option: Microcomputer Specialist

OFFICE SYSTEMS

- Court Reporting

- Office Administration

 - Clerical Office Assistant *

 - Executive Office Administration

 - Legal Office Administration

 - Medical Office Administration

 - Word Processing Management

ENGINEERING AND SCIENCE TRANSFER

- Biotechnology

- Engineering and Science Transfer

 - Engineering Transfer Option

 - Technical Engineering Option

 - Computer Science Transfer Option

 - Science Transfer Option

 - Biology Option

 - Chemistry Option

 - Physics/Mathematics Option

 - Pre-Medical/Pre-Dental/Pre-Veterinary Option

 - Pre-Pharmacy Option

ENGINEERING TECHNOLOGIES

- Automotive Technology
- Biomedical Instrumentation Technology
- Civil Engineering Technology
- Computer Systems Engineering Technology
- Drafting Technology *
- Electrical/Robotics Technology
- Electronic Systems Engineering Technology
- Energy Systems Technology
- Environmental Technology
- Graphic Arts Technology
 - Option: Commercial Art
 - Option: Printing Technology
- Landscape Design and Management Technology
- Laser Electro-Optics Technology
 - Option: Laser Applications
 - Option: Photonics (*planned implementation fall 1996*)
 - Option: Optical Fabrication and Testing (*planned implementation fall 1996*)
- Mechanical Engineering Technology
 - Option: Computer-Integrated Manufacturing
 - Option: Computer-Aided Design/Computer-Aided Manufacturing
- Telecommunications Technology

HEALTH

HEALTH/HUMAN SERVICES

- Clinical Laboratory Science
- Cosmetology *
- Cosmetology Management
- Dental Assistant *
- Dental Hygiene
- Diagnostic Medical Sonography
- Medical Assistant
- Nuclear Medicine Technology
- Occupational Therapy Assistant
- Physical Therapist Assistant
- Radiation Therapy Technology
- Radiography
- Respiratory Care
- Surgical Technology

NURSING

LIBERAL ARTS AND SCIENCES

Early Childhood Education

Law Enforcement/Criminal Justice

Liberal Arts/General Studies

Option: Transfer

Option: University Without Walls

Liberal Arts Transfer

Option: Fine Arts

Option: Education Transfer

Option: Arts and Technology – Visual Arts

Option: Arts and Technology – Dramatic Arts

Option: Arts and Technology – Musical Arts

* Certificate Program

Business



Business Administration

The Business Administration department offers a variety of programs to satisfy the needs of its students, whether it be the desire to transfer to a four-year college or university to complete the Baccalaureate Degree or to enter the field of business directly from STCC. The main objective of the Department is to enable the student to develop those skills and proficiencies that are essential to the competent performance of professional work either in the classroom or on the job.

There is a comprehensive range of elective courses available in each of the degree programs. These electives allow the student and faculty advisor to structure a program consistent with specific interests and goals. The following illustrates the programs at STCC:

BUSINESS ADMINISTRATION

Certificate in Accounting (one-year program)

This program is offered through the Day Division as well as through the Division of Continuing Education. Upon successful completion, graduates are awarded a Certificate in Accounting by Springfield Technical Community College.

Associate in Science degree programs

- Accounting
- Finance
- Management
- Small Business Management Option
- Marketing
- General Business
- General Business/Transfer Compact Option

The Accounting, Finance, Management, Small Business Management, Marketing and General Business degrees or options require a minimum of 21 credits of liberal arts, math and science courses and the remaining 41 credits in business and general course electives. These programs are designed to meet career objectives or transfer goals to four-year colleges. The General Business/Transfer Compact Option requires a minimum of 38 credits of liberal arts, math and sciences courses and the remaining 26 credits in business and general course electives. This program is designed to meet transfer requirements to four-year *Public* colleges, or universities that are members of the Commonwealth Transfer Pact, or those colleges that are accredited by the AACSB.

All candidates for graduation must complete a minimum of 62 credit hours except those in the Transfer Compact Option program where the minimum of 64 credit hours is required, as well as maintain a minimum grade point average of 2.0.

Transfer students are required to complete a minimum of 15 credit hours of Business Department courses at Springfield Technical Community College.

Challenge and CLEP exams covering a number of career and general courses are available at STCC.

BUSINESS ADMINISTRATION

CORE CURRICULUM:

The Department of Business Administration provides a common curriculum in the Freshman year for all Associate Degree programs, exposing students to a variety of introductory business courses before they choose a degree and a major. Before you can be completely scheduled, the College requires that you take math and English placement tests. Depending on your results, you will be assigned to one of the following English and math courses:

English

LD 092	Reading Level 2
LD 099	Review for College Writing
LE 100	English Composition 1

Math

MM 071	Basic Math
MM 081	Elements of Algebra 1
MM 091	Elements of Algebra 2
MM 122	Applied Math 1
MM 143	Business Statistics 1
MM 157	Calculus for Business, Life and Social Sciences 1

Of these three English courses, only LE 100, English Composition 1, is accepted toward graduation. Of the six math courses, only MM 122, Applied Math or MM 157, Calculus for Business, Life and Social Sciences 1 for transfer students, or MM 143 Business Statistics for career students, are accepted toward graduation. While you might be placed in other math or English courses, and hence be required to complete them, these courses are considered as developmental by the College, and will not count toward graduation. If you have been out of school for a number of years, or are weak in math and/or English, it would be wise to review these skills before you take the placement tests. In this way, you will give yourself the best chance of placing into an acceptable level of English and math.

FRESHMAN YEAR

Common Core Requirements for all Associate Degree programs.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MM 143	Business Statistics 1 (or)			
MM 122	Applied Math 1 (or)			
MM 157	Calculus for Business, Life and Social Sciences 1 (Note 2)	3		3
BA 110	Accounting1	5		4
BK 110	Principles of Management	3		3
BD 300	Microcomputer Applications (Note 1)	3		3
		17		16

SEMESTER 2

LE 200	Comp. 2: Intro. to Lit. Math or Humanities or Social Science Elective (Note 2 and 3)	3		3
BA 210	Accounting 2	5		4
BF 110	Intro. to Finance	3		3
BI 110	Principles of Marketing (Note 4)	3		3
		17		16

NOTES:

- (1) BD 301 Microcomputer Applications for Windows, or BD 101 Computer Concepts may be substituted.
- (2) Transfer students must take MM 122 Applied Math 1 or MM 157 Calculus for Business, Life, and Social Sciences 1 in Semester 1 and MM 222 Applied Math 2, MM 257 Calculus for Business, Life, and Social Sciences 2, or MM 142 Statistics in Semester 2. Career students should take MM 143 Business Statistics 1 in Semester 1 and MM 243 Business Statistics 2 or a Humanity or Social Science elective in Semester 2.
- (3) Humanities electives include art, college theater, foreign languages, music, philosophy, and literature. Social science electives include history, political science, sociology, psychology, and economics.
- (4) Students enrolled in the Small Business Management Option should take BP 112 Small Business Marketing.

Business Administration — Associate in Science Degree

The information that follows illustrates the course sequence for the second year of study

ACCOUNTING

The demand for trained accountants has increased substantially with the growth and complexity of business and government. Students of accounting, therefore, must follow a program of training which prepares them to handle the financial accounts of private and public organizations. The modern accountant must have an appreciation of all aspects of business organizations as well as technical proficiency in the following accounting matters: maintaining accurate accounting records; preparing and analyzing financial statements and cash flow reports; calculating payroll and payroll taxes; and understanding the basics of the partnership and corporate forms of business. Manpower projections have typically shown that accountants are among those who are in high demand and well paid.

Senior Year Courses**SEMESTER 3**

No.	Course Title	Class	Lab	Credits
BA 310	Intermediate Accounting 1	4		3
BA 311	Cost Accounting	4		3
BB 310	Business Law 1	3		3
NE 100	Economics 1	3		3
NS 100	Intro. to Sociology (or)			
NP 100	General Psychology	3		3
		17		15

BUSINESS ADMINISTRATION

SEMESTER 4

BA 410	Intermediate Accounting 2	4	3
BF 411	Managerial Finance (or)		
BA 313	Federal Income Tax	3	3
BB 410	Business Law 2	3	3
NE 200	Economics 2	3	3
	Elective: General	3	3
		<hr/> 16	<hr/> 15

Upon the successful completion of the requirements for this program, as listed above, the degree of **Associate in Science in Business Administration-Accounting** will be awarded.

FINANCE

A study of the field of finance exposes the student to the sources and uses of money. Such a curriculum includes courses in the raising of new capital, the efficient use of available funds, investing, money and banking, the Federal Reserve System and other basic studies related to the monetary system. Emphasis is given to analysis of financial statements as well as fiscal planning and management.

Senior Year Courses

SEMESTER 3

No.	Course Title	Class	Lab	Credits
BF 310	Money & Banking	3		3
BA 312	Managerial Accounting	3		3
BB 310	Business Law 1	3		3
NE 100	Economics 1	3		3
NS 100	Intro. to Sociology (or)			
NP 100	General Psychology	3		3
		<hr/> 15		<hr/> 15

SEMESTER 4

BF 410	Investments	3	3
BF 411	Managerial Finance	3	3
BB 410	Business Law 2	3	3
NE 200	Economics 2	3	3
	Elective: General	3	3
		<hr/> 15	<hr/> 15

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Business Administration-Finance** will be awarded.

MANAGEMENT

The management program at STCC is designed to give the student a comprehensive background in the area of management. The curriculum is

student-oriented primarily because its content respects the student's need for a challenging, thorough examination of the field of management, and because it provides a sound foundation for further study. In addition, specialized courses such as human resource management, organizational behavior, labor relations, production, and operation research provide the student with the necessary knowledge to make positive contributions to any commercial or non-commercial organization.

Senior Year Courses

SEMESTER 3

No.	Course Title	Class	Lab	Credits
BK 310	Human Resource Management	3		3
BA 312	Managerial Accounting	3		3
BB 310	Business Law 1	3		3
NE 100	Economics 1	3		3
NS 100	Intro. to Sociology (or)			
NP 100	General Psychology	3		3
		<u>15</u>		<u>15</u>

SEMESTER 4

BK 427	Organizational Behavior	3		3
BK 410	Labor Relations (or)			
BK 411	Production Management	3		3
NE 200	Economics 2	3		3
BB 410	Business Law 2	3		3
	Elective: General	3		3
		<u>15</u>		<u>15</u>

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Business Administration-Management** will be awarded.

SMALL BUSINESS MANAGEMENT OPTION

In the Greater Springfield area many businesses are classified as small businesses by the Federal Government. Over the last few years the Federal and State governments have begun to recognize the importance of the small business in our society and community. In order that these businesses not be eliminated, special tax incentives and loan guarantees have been proposed and some enacted. In addition, Small Business Development Centers have been created across the state to provide increased technical assistance.

The Business Department believes that the owners and professional staff of small businesses need a specially tailored curriculum that will provide the technical expertise to operate successfully.

BUSINESS ADMINISTRATION

Senior Year Courses

SEMESTER 3

No.	Course Title	Class	Lab	Credits
BP 341	Small Business Human Resource Management	3		3
BA 314	Small Business Planning & Control	3		3
BB 412	Small Business Law & Insurance	3		3
NE 100	Economics 1	3		3
NS 100	Intro. to Sociology (or)			
NP 100	General Psychology	3		3
		<u>15</u>		<u>15</u>

SEMESTER 4

BP 342	Small Business Practicum	3		3
BP 343	Small Business Seminar	3		3
	Business Department Elective (Note 1)	3		3
NE 200	Economics 2	3		3
	Elective: General	3		3
		<u>15</u>		<u>15</u>

NOTE: (1) Any Business Department course except those introductory business courses in the 100 or 200 series.

Upon successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Business Administration-Management** will be awarded.

MARKETING

In recent years, Marketing has become an increasingly important activity within our society and, in particular, in New England where there is a growing emphasis on the providing of services. Marketing is a broad field which includes defining and creating a market for a product, gauging and meeting customer wants and needs, advertising, sales, retailing, fashion and merchandising and related areas. Essentially, the study of marketing relates to the performance of business activities that direct the flow of goods and services from producers to consumers.

Senior Year Courses

SEMESTER 3

No.	Course Title	Class	Lab	Credits
BI 310	Retailing	3		3
BI 410	Consumer Behavior	3		3
BB 310	Business Law 1	3		3
NE 100	Economics 1	3		3
NS 100	Intro. to Sociology (or)			
NP 100	General Psychology	3		3
		<u>15</u>		<u>15</u>

SEMESTER 4

BI 311	Advertising and Promotion	3	3
BI 411	Sales & Sales Mgmt.	3	3
BB 410	Business Law 2	3	3
NE 200	Economics 2	3	3
	Elective: General	3	3
		<u>15</u>	<u>15</u>

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Business Administration-Marketing** will be awarded.

GENERAL BUSINESS

The General Business program allows students maximum flexibility in choosing Business Department electives covering the Accounting, Finance, Management and Marketing areas. The students receive a general overview and broad background in business subjects. This program may be preferred by those unable to decide on a major after completing the Freshman core business program (described previously) or by those contemplating transfer to a four-year college who want the flexibility of choosing business electives for a particular institution.

Senior Year Courses**SEMESTER 3**

No.	Course Title	Class	Lab	Credits
	Business Dept. Elective (Note 1)	3		3
	Business Dept. Elective (Note 1)	3		3
BB 310	Business Law 1	3		3
NE 100	Economics 1	3		3
NS 100	Intro. to Sociology (or)			
NP 100	General Psychology	3		3
		<u>15</u>		<u>15</u>

SEMESTER 4

	Business Dept. Elective (Note 1)	3	3
	Business Dept. Elective (Note 1)	3	3
BB 410	Business Law 2	3	3
NE 200	Economics 2	3	3
	Elective: General	3	3
		<u>15</u>	<u>15</u>

NOTE:

- (1) Any Business Department course except those introductory business courses in the 100 or 200 series.

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Business Administration** will be awarded.

BUSINESS ADMINISTRATION

GENERAL BUSINESS/TRANSFER COMPACT OPTION*

While any of the previously mentioned programs could be used for transfer, the General Business/Transfer Compact program has been designed to meet the transfer requirements of four-year Public colleges or universities that are members of the Commonwealth Transfer Compact, or those colleges that are accredited by the AACSB.

This program may be preferred by those wishing a greater mix of liberal arts, math and science courses. A total of 38 credits of such courses are required as compared to 21 to 24 credits in the other six (6) programs mentioned previously. In addition, if you desire to transfer to a *Public State College or University* that requires its incoming juniors to meet the transfer compact, then you should consider following this program.

*Please note that this program is a specially designed transfer program and not meant to be for all transfer students. You should consult with your advisor or the college's transfer counselor to decide which of the programs would best meet your transfer needs.

Senior Year Courses

SEMESTER 3

No.	Course Title	Class	Lab	Credits
NE 100	Economics 1	3		3
NS 100	Intro. to Sociology (or)			
NP 100	General Psychology	3		3
	Elective: Laboratory Science	3	2	4
	Humanities Elective (Note 1)	3		3
	Business Dept. Elective (Note 2)	3		3
		<hr/> 15	<hr/> 2	<hr/> 16

SEMESTER 4

NE 200	Economics 2	3		3
	Humanities Elective (Note 1)	3		3
	Humanities Elective (Note 1)	3		3
	Business Dept. Elective (Note 2)	3		3
	Elective: Laboratory Science	3	2	4
		<hr/> 15	<hr/> 2	<hr/> 16

NOTE:

- (1) Humanities electives must be selected from art, college theater, foreign languages, music, philosophy and literature.
- (2) Any Business Administration Department course, except those introductory business courses in the 100 or 200 series.

Please note: The appropriate mathematics, humanities, science, and business electives depend upon the college to which you are planning to transfer. All course choices should be discussed with the College's transfer counselor or your advisor.

Upon successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Business Administration** will be awarded.

CERTIFICATE IN ACCOUNTING**Certificate of Completion Program**

This program is offered through the Day Division as well as through the Division of Continuing Education. Upon successful completion of this program, graduates are awarded a Certificate by Springfield Technical Community College.

A two-semester program leading to a Certificate in Accounting can be extremely valuable to persons who do not have the time or the inclination to undertake a full two-year program, or who have graduated from a two- or four-year program and plan to enter a field requiring accounting skills.

With business today calling more and more for trained individuals with specific skills, the accounting certificate program is well suited for individuals who are looking for a career in which regional manpower studies indicate a high demand, and who are seeking a challenging and interesting course of study.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
BA 110	Accounting 1	5		4
BA 115	Numerics for Business and Industry	3		3
BD 300	Microcomputer Applications	3		3
BK 112	Managerial Supervision	3		3
LE 100	English Composition 1	3		3
		<hr/> 17		<hr/> 16

SEMESTER 2

BA 210	Accounting 2	5		4
BA 315	Business Taxation	3		3
BA 316	Computerized Accounting	3		3
LE 201	Business English	3		3
		<hr/> 14		<hr/> 13

Upon successful completion of the requirements of this program, a **Certificate of Completion in Accounting** from STCC will be awarded.

Descriptions of courses offered by the department begin on page 193.

Computer Information Systems/Data Processing

Associate Degree Program

The utilization of all sizes of computers has extended into every area of business, whether large or small, and into most state and local government agencies. As a result, the need for trained personnel in various areas of computer utilization has increased sharply and is continuing.

The Computer Information Systems/Data Processing Department prepares the student for immediate career opportunities, or to transfer to a four-year college or university to complete a bachelor's degree in Computer Information Systems. Students develop professional skills and proficiencies in a variety of programming languages. Graduates typically are employed as entry-level programmers, and

COMPUTER INFORMATION SYSTEMS/DATA PROCESSING

after a few years of experience might concentrate further in programming or go into systems analysis and design.

The department offers two areas of concentration based on a common core of courses, which allows the student to easily switch or modify tracks, depending on his or her specific interests and future goals. The basic curriculum of the department is minicomputer-oriented, and emphasizes programming languages. The microcomputer specialist option is designed to meet the growing demand for technical support in microcomputers and Local Area Networks.

STCC was the first college in Western Massachusetts to offer a curriculum in data processing, and continues to stay current with the industry. The faculty are experienced, and teach a very practical, real-world approach to the field.

All candidates for the Associate in Science Degree in Data Processing must complete the curriculum as shown in the catalog at the time of acceptance into the College, whether it be in the Day or Evening program. The Microcomputer Specialist option is not offered in the evening. A minimum grade point average of 2.0 is required in both general and specialized areas for graduation.

In some cases work experience may be recognized for course credit, e.g., Co-Op. Also, challenge exams covering a number of career and general courses, are available at STCC.

Upon the successful completion of requirements for this program, the degree of **Associate in Science in Data Processing** will be awarded.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
BA 113	Accounting/Financial	5		4
BA 301	Microcomputer Applications for Windows	3		3
BD 105	Pascal	3	2	4
BZ 100	Keyboarding (Note 1)	1		1
LE 100	English Composition 1	3		3
MM 122	Applied Mathematics 1	3		3
		18	2	18

SEMESTER 2

BA 213	Accounting/Managerial	5		4
BD 107	BASIC	3	2	4
BD 302	COBOL 1	3	2	4
LE 200	English Composition 2	3		3
MM 222	Applied Mathematics 2	3		3
		17	4	18

SEMESTER 3

BD 303	C Programming	3	2	4
BD 402	Advanced COBOL	3	2	4
BD 313	Operating Systems	2	2	3
BD 314	Database Systems	2	2	3
	Elective: Humanities	3		3
		13	8	17

SEMESTER 4

BD 405	Object-Oriented Programming (or)			
BD 102	RPG	3	2	4
BK 110	Principles of Management	3		3
BD 410	Systems Analysis and Design	1	4	3
NP 100	General Psychology (or)			
NS 100	Intro. to Sociology	3		3
	Elective: General	3		3
		<hr/> 13	<hr/> 6	<hr/> 16

The following additional courses are also available:

BD 412	Local Area Networks
BD 322	On-Line Communication
BD 315	Advanced Spreadsheets
ED 101	Basic Computer Maintenance

Elective in Semester 4 may be selected from the following areas:
Humanities, Social Sciences, Mathematics, Science

Note 1: This course is not required of students who have had typing in high school.

MICROCOMPUTER SPECIALIST**(OPTION TO COMPUTER INFORMATION SYSTEMS)**

Microcomputers have had a profound effect on the business community. Companies of all sizes have been quick to capitalize on the increase in productivity from employees who are skilled in the use of microcomputers. The current installed base of IBM personal computers and compatibles is estimated to be over 25 million workstations. Worldwide sales of all personal computers for 1989 totaled roughly \$60 billion, or about twice that of the mainframe market. The need for technical service and support for microcomputers and networks has spawned a new type of computer professional, the microcomputer specialist. This option is offered only in the Day Division.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
BA 313	Accounting/Financial	5		4
BD 301	Microcomputer Applications for Windows	3		3
BZ 100	Basic Keyboarding (Note 1)	1		1
ED 101	Basic Computer Maintenance	3		3
LE 100	English Composition 1	3		3
MM 122	Applied Mathematics 1	3		3
		<hr/> 18		<hr/> 17

SEMESTER 2

BA 213	Accounting/Managerial	5		4
BD 107	BASIC	3	2	4
BD 315	Advanced Spreadsheets	3		3
LE 200	English Composition 2	3		3
MM 222	Applied Mathematics 2	3		3
		<hr/> 17	<hr/> 2	<hr/> 17

COMPUTER INFORMATION SYSTEMS/DATA PROCESSING

SEMESTER 3

BD 313	Operating Systems	2	2	3
BD 314	Database Systems	2	2	3
BD 320	Desktop Publishing	3		3
	Elective: Computer Information Systems	3		3
	Elective: Humanities	3		3
		<hr/> 13	<hr/> 4	<hr/> 15

SEMESTER 4

BD 410	Systems Analysis and Design	1	4	3
BD 412	Local Area Networks	3		3
BK 110	Principles of Management	3		3
NP 100	General Psychology (or)			
NS 100	Intro. to Sociology	3		3
	Elective: General (Note 2)	3		3
		<hr/> 13	<hr/> 4	<hr/> 15

NOTES:

- 1.) This course is not required of students who have had typing in high school.
- 2.) General elective may be selected from the following: humanities, social sciences, mathematics, or science.

DATA PROCESSING

Certificate of Completion program

Successful completion of the following required courses would prepare the student for employment as an entry-level programmer in a microcomputer or mainframe environment. The numerous programming languages give the student a wide variety of potential employment opportunities.

No.	Course Title	Credits
BD 101	Computer Concepts (or)	
BD 300	Microcomputer Applications (or)	
BD 301	Microcomputer Applications for Windows	3
BD 102	RPG	4
BD 107	BASIC (or)	
BD 105	Pascal	4
BD 202	Advanced RPG (or)	
BD 303	C Programming	4
BD 302	COBOL 1	4
BD 402	COBOL 2	4
BD 313	Operating Systems	3
		<hr/> 26

Upon successful completion of the requirements for this program, a **Certificate of Completion in Data Processing** from STCC will be awarded.

MICROCOMPUTER SPECIALIST

Certificate of Completion program

Successful completion of the following required courses would prepare the student for employment as a computer systems manager of a small- to medium-sized

office. This could involve doing routine maintenance, upgrades of hardware and software, minor hardware repairs, and software installations, as well as having a solid foundation in several computer applications.

No.	Course Title	Credits
BD 101	Computer Concepts	4
BD 107	BASIC	4
BD 300	Microcomputer Applications (or)	
BD 301	Microcomputer Applications for Windows	3
BD 313	Operating Systems	3
BD 314	Database Systems	3
BD 315	Advanced Spreadsheets	3
BD 320	Desktop Publishing	3
BD 412	Local Area Networks	3
ED 101	Basic Computer Maintenance	3
		<hr/> 29

Upon successful completion of the requirements of this program, a **Certificate of Completion in Microcomputer Specialist** from STCC will be awarded.

Descriptions of courses offered by this department begin on page 210.

Court Reporting

Associate Degree Program

Court Reporting is a fascinating, challenging, rewarding, and highly respected profession for thousands of men and women. It can offer a great deal of independence as well as financial, personal, and professional satisfaction.

Technology has revolutionized the field of court reporting. Today's reporter must use a conflict-free theory in order to provide state-of-the-art computer-integrated reporting, i.e., realtime applications, closed captioning for the hearing impaired, video captioning, litigation support services, and compressed transcripts. Whether working in a computer-integrated courtroom or college classroom designed to offer total access to Americans with disabilities, a television station or a corporate boardroom, an institutional "think-tank" or a pre-trial deposition, today's reporter must be highly skilled in delivering high tech reporting. Today's professional reporters are unmatched in their ability to deliver a carefully edited finished product — whether it be a transcript, report, or script — in record time, with full or reduced pages, precisely synchronized to videotape, and with individual annotations, impact codes, and ASCII disks for litigation support services.

The National Court Reporters Association states that today's technologically advanced reporters are more valuable and secure than ever before.

Springfield Technical Community College has one of the most comprehensive two- or three-year court reporting programs available. STCC's Court Reporting program instructors are certified (CRIs) by the National Court Reporters Association and follow all NCRA training guidelines. New machine shorthand classes begin every September; however, it is highly recommended that students enter the program early and complete their general education requirements prior to starting their shorthand studies.

COURT REPORTING

STCC offers state-of-the-art integrated information processing (IWP), computer-aided instruction (CAI), computer-aided transcription (CAT), and computer-aided realtime (CART) training — which provides advanced students with hands-on realtime reporting experience and an extensive personal dictionary upon graduation.

Personal and professional traits of importance for court reporting are: intelligence, dedication, stamina, initiative, good judgment, poise, discretion, conscientiousness, and good human relations skills; well-developed abilities to listen and concentrate; an extensive vocabulary; and excellent spelling, punctuation, grammar, proofreading, and transcription skills.

PREREQUISITES TO THE COURT REPORTING PROGRAM

1. 40 net WPM on five-minute placement test with maximum of five uncorrected errors.
2. Placement in college-level English on the STCC Placement Test.
3. Satisfactory score on any Court Reporting Departmental Placement Test.
4. A basic background in word processing is recommended.

The **three-year Court Reporting Program** is available for students who have personal and/or professional responsibilities which would not allow a total commitment to the intensive two-year Court Reporting Program. Three-year students complete a year of required academic studies prior to enrolling in Machine Shorthand courses.

SPECIFIC INFORMATION AND GUIDELINES

1. Machine Shorthand classes meet four to five days a week for two to three years.
2. Machine Shorthand classes meet throughout the entire year — including winter and summer intersessions.
3. Students are required to practice a minimum of 4-6 hours a day outside of class.
4. Students are required to purchase a shorthand machine prior to the first day of classes.
5. Students must plan home, work, and academic schedules so that shorthand studies receive maximum time and energy.
6. Students must be enrolled in the full degree program at all times. Students who withdraw from academic requirements will not be entitled to continue their machine shorthand courses.
7. Students must maintain a minimum B- QPA (2.7) throughout their program.
8. Students must pass two 200 WPM five-minute Q&A dictation tests with a minimum of 97% accuracy before beginning internship training.
9. Incremental speed testing material will be no less than 1.4 syllabic density.

COURT REPORTING GRADUATION REQUIREMENTS

1. MACHINE SHORTHAND:

- (a) Graduates must have passed three (3) speed tests with 95% and 97% accuracy at:

180 WPM Literary 200 WPM Jury Charge 225 WPM 2-voice Testimony

- (b) Graduates must have completed a simulated Registered Professional Reporter (RPR) skills test at the above-stated graduation speeds within 3½ hours.
- (c) Graduates must have completed a simulated Certified Realtime Reporter (CRR) skill test at 180-200 WPM Literary.
- 2. **TYPING:** Graduates must have passed two (2) five-minute typing tests with a minimum of 50 WPM net allowing no more than five uncorrected errors and deducting two for each error.
- 3. **INTERNSHIP:** Graduates must have completed a minimum of 50 verified hours of actual writing time (court and deposition) during internship.
- 4. **INTERNSHIP:** Graduates must have satisfactorily completed a minimum of 40 to 60 salable transcript pages from internship testimony — submitted in final edited form and appropriate style, including title page, index, and certification page where applicable.
- 5. **PROCEDURES/TECHNOLOGY:**
 - (a) Graduates must have produced at least ten (10) salable deposition or court transcript pages on a computer-aided transcription system in two hours or less.
 - (b) Graduates must have produced a five-page, first-pass transcript with a minimum 95% translation rate.
- 6. **COURSE:** Graduates must have satisfactorily completed all program and course requirements.

SPECIAL COURT REPORTING PROGRAM EXPENSES

In addition to tuition and fees for day school and summer and winter intersessions, students should plan on the following approximated expenses over a two-year period:

Basic shorthand machine and tripod:	\$ 775	
Variable speed cassette tape player:	125	
Books:	1,000	
Steno ribbons:	60	
Stenography steno-pad paper cartons:	600	
Steno ink:	20	
Blank 90-minute commercial quality cassette tapes:	400	
Computer and transcript supplies:	150	TOTAL: \$3,130

It is not recommended that students work while enrolled in our Court Reporting Program. Students will attend classes from approximately 8:30 a.m. until 3:00 p.m. In addition to completing their studies for various courses, they will be required to spend a minimum of four to six hours of daily practice on their steno machines. This type of schedule does not lend itself to outside employment. Those who must work should consider the three-year program.

When students qualify for practical internship, they need a professional wardrobe to wear to legal offices and courthouses. This represents a necessary expense in each student's final semester.

Transportation to classes, internship locations, and moot court sessions at the local law school, and parking costs are also expenses to be considered.

COURT REPORTING

Some advanced students invest in computerized steno machines prior to or during internships. Graduating students must plan on this \$3,000 to \$4,000 purchase as a minimum expense to working with firms equipped with computer centers for freelance use. Other graduating students will invest in complete realtime compatible systems representing a \$10,000 investment, thereby setting themselves up as independent contractors who can do transcript preparation at home and on-site CART reporting.

NOTE: A UNIT OF CREDIT shall be awarded for a minimum of 15 instructional hours. Many courses will require more than 15 instructional hours per unit of credit.

COURSE REPEAT POLICY: Court Reporting students who withdraw from a course or who receive a grade of less than a "C" may repeat that course with the written approval of their academic advisor and professor. Both grades will appear on their permanent record; however, only the second grade will be calculated in their quality point average (QPA). Court Reporting students would be allowed to repeat a course a second time (a third enrollment) if there are written extenuating circumstances approved by the department chairman. Further course enrollments will not be permitted.

NCRA BOARD ON APPROVED STUDENT EDUCATION (BASE): This 1995-96 catalog incorporates the newly adopted NCRA General Requirements and Minimum Standards for approved court reporting training programs effective August 1, 1996. Some of the new requirements will be phased in and others will be effective September 1, 1995. Please refer to individual course syllabi for semester requirements.

The Court Reporting program requires tremendous dedication and effort, and from this the graduate will reap equally tremendous satisfaction, remuneration, and prestige. **Success will be directly proportionate to individual commitment and pursuit of excellence.**

MISSION STATEMENT: STCC Court Reporting is dedicated to offering certified, comprehensive instruction utilizing the most progressive theory and computer technology to train qualifying students to excel in a myriad of reporting/captioning environments, thus contributing not only to the quality of professional and personal life and living of its graduates but also to the legal, corporate, municipal, governmental, and deaf and hearing-impaired populations they service.

STCC 1996 Associate Degree Court Reporting Program

SEMESTER 1

No.	Course Title	Class	Lab	Credits
BC 101	Machine Shorthand 1 (60 Lit.)	5	3	5
BC 106	CAI Machine Shorthand 1(1CRE)(Note 2)			
LE 100	English Composition 1	3		3
MB 143	Fundamentals of Anatomy & Physiology 1 (or)			
AA 101	Medical Terminology 1 (Note 1)	3		3
NL 110	Introduction to Criminal Justice	3		3
		<hr/> 14	<hr/> 3	<hr/> 14

WINTER INTERSESSION

BC 070 Skillbuilding 1 (3NGC) may be scheduled

SEMESTER 2

BC 201	Machine Shorthand 2 (80-100 Lit.)	5	3	5
BC 206	CAI Machine Shorthand 2 (1CRE) (Note 2)			
BC 105	Court Reporting Editing	3		3
BC 310	Intro. to Realtime (1CRE) (Note 2)			
LE 200	English Comp. 2: Intro. to Literature	3		3
MB 243	Fundamentals of Anatomy & Physiology 2 (or)			
AA 101	Medical Terminology 1 (Note 1)	3		3
	Elective 1: Humanities/Social Science	3		3
		<hr/> 17	<hr/> 3	<hr/> 17

SUMMER SESSIONS 1 & 2

BB 310	Business Law 1	3		3
BC 304	Machine Shorthand 3 (120 Lit., 140 Q&A/JC)	6	4	6
BC 306	CAI Machine Shorthand 3 (1CRE) (Note 2)			
	Elective 2: Humanities/Social Science	3		3
		<hr/> 12	<hr/> 4	<hr/> 12

SEMESTER 3

BC 301	Court Reporting Medical Shorthand Terminology	3	2	3
BC 305	Court Reporting Legal Shorthand Terminology	3		3
BC 314	CR Computer Transcription App. 1	3	2	3
BC 315	Court Reporting Transcription & Procedures 1	3	2	3
BC 400	Machine Shorthand Apps. 1 (3CRE) (Note 2)			
BC 404	Machine Shorthand 4 (160 Lit., 180 Q&A/JC)	6	4	6
		<hr/> 18	<hr/> 10	<hr/> 18

WINTER INTERSESSION

BC 090 Skillbuilding 2 (3NGC) may be scheduled

SEMESTER 4

BC 405	CR Medical Dictation/Transcription	3		3
BC 414	CR Computer Transcription Apps. 2 (3CRE) (Note 2)			
BC 413	Court Reporting Technology/Internship	3	6	4
BC 415	Court Reporting Transcription & Procedures 2	2	2	2
BC 500	Machine Shorthand Applications 2 (3 CRE) (Note 2)			
BC 501	Machine Shorthand 5 (180 Lit., 200JC, 200 & 225 Q&A)	5	3	5
		<hr/> 13	<hr/> 11	<hr/> 14

COURT REPORTING

Total required graduation credits: 75

Note: (NGC) Inter-session course: Non-Graduation Credit

- (1) MB 143 and MB 243 may be replaced with AA 101 Medical Terminology to meet program requirement.
- (2) (CRE) Court Reporting elective: BC electives are not required for graduation, but content is required by NCRA. Total recommended Court Reporting elective credits: 13 (some electives may be audited; permission required)
- (3) Most courses held in CR CAT Lab for maximum realtime development
- (4) Honors courses offered in Machine Shorthand (200 Lit., 225 & 240 JC, 240 & 260 Q&A) and CART. See course descriptions.

Upon the successful completion of requirements for this program, the degree of **Associate of Science in Court Reporting** will be awarded.

Descriptions of courses offered by this department begin on page 218.

Office Administration

The Office Administration Department at STCC offers some of the most exciting programs on campus because its curricula reflect the rapid changes taking place in business offices. The modern office is being revolutionized by highly sophisticated electronic technology, and a "new breed" of office professional is emerging. The "Office of the Future" has already arrived, bringing with it integrated office systems and administration. The Massachusetts Division of Employment Security reports that 6,000 new office administration positions are created in Massachusetts each year, making it one of the fastest-growing job categories in the state. The severe national shortage of office personnel, the rapid technological advances in office automation and office administration, and the new opportunities for increased earning potential and career advancement make the Office Administration Department an excellent choice for distinctive business training. It is predicted that office workers will total 90% of the working population by the year 2000.

Today's office administration specialist is seen as part of the management team, and has administrative functions which include planning, organizing, and directing. Promotional possibilities include administrative specialist, office manager, records administrator, and other positions. And today's specialist commands a higher and higher salary. At a time when secretaries have become increasingly important to business, there is a critical shortage, causing an increase in salaries and benefits.

The **Office Administration Department** offers several unique programs: the one-year **Clerical Office Assistant** certificate program; the **Office Administration degree cluster** — including **Executive, Legal, and Medical** options — and the **Word Processing Management** degree program.

The Legal Office Administration program is our intensive office administration program, offering courses in Gregg shorthand, legal terminology, and legal shorthand development. Graduates from this intensive legal program are both executive and legal secretaries, and can apply for a wider variety of office administration positions. The intensive legal program is highly recommended, since the highest salaries and best promotional advancements are generally awarded to candidates with top-level skills. A marketable skill in shorthand is worth an

additional \$100 to \$200 a month in salary, because in addition to possessing well-developed shorthand skills, shorthand writers are perceived as having an abundance of highly-developed skills usually not found in non-shorthand writers, such as well-developed language arts skills, transcription skills, organizational skills, and overall intellectual development.

The Executive and Medical Office Administration programs are non-shorthand programs.

All of our programs offer special career opportunities and specific academic studies. Many of these academic studies are common to all programs, and many are unique. Entering students may already have some well-developed skills in subjects like typewriting, shorthand, and records management which would make them eligible to sit for challenge examinations, designed to allow credit for acquired skills and thus enable students to enroll in a variety of advanced courses in related areas.

Office administration specialists now use computers all the time for word/information processing, telecommunications, list processing, spread sheet, data processing, and desktop publishing. We have even entered the era of computer shorthand for Gregg shorthand and non-shorthand writers.

As a result of the corporate world's technological office revolution, today's office administration specialist specializes in integrated information systems, organization, and management. Titles, salaries, benefits, roles, and responsibilities are all enhanced, and getting better and better for today's office administration specialist.

Office administration programs are very intensive, requiring approximately 30 to 40 hours of study outside class each week; and it will be worth the effort because it will bring you many rewards in job satisfaction and career advancement. STCC's Office Administration/management courses, faculty, and extensive new training facilities are state-of-the-art, and cannot be matched.

The Office Administration Department offers students the most up-to-date programs through its active memberships in the Association of Information Systems Professionals; Professional Secretaries, International (faculty CPS advises campus chapter); the American Management Society; the National Association of Female Executives; and the Massachusetts Shorthand Reporters Association.

Minimum English and Math Skills Requirements:

Students must place in LE 100 prior to registering for a full first semester course schedule.

Students must place through MM 073 prior to registering for Micronumerics, Office Accounting, and/or Accounting 1. Students must place through MM 093 prior to registering for Business Statistics.

Before being scheduled into the Office Administration Department, the College requires that you take math, reading, and English placement tests. If you have been out of school for a number of years, or are weak in math and/or reading comprehension and English, it would be wise to review these skills before you take the placement tests. Depending on your results and your program, you might want to take some of the following English and math courses prior to your first semester.

OFFICE ADMINISTRATION

English

LD 088 Basic Writing Skills
LD 090 Reading
LD 091-2 Reading Level 1-2
LD 099 Review for College Writing

Math

MM 078 Basic Mathematics Lecture
MM 087 Elements of Algebra 1
MM 097 Elements of Algebra 2

Special courses for bilingual students are:

LD 080-3-6 English As a Second Language, level, 1, 2, 3
LD 081-4-7 English Reading Comprehension for Bilinguals 1-3

Minimum Grade Requirement: Students enrolled in the Office Administration Department are required to achieve a "C" (73%) or better as a final grade in specified departmental offerings. A minimum quality point average of 2.0 is required in order to be eligible for graduation.

Minimum Speed Requirements: All students are required to achieve the minimum "Speed Requirements" in all departmental offerings.

Minimum Standards: All third and fourth semester students are required to achieve the minimum "Mailability Standards" in all departmental offerings.

Cooperative Education: Cooperative Education is available to eligible seniors who wish to enhance their education with work experience. Co-Op work must follow the guidelines of the Department and the Cooperative Education Office.

EXECUTIVE OFFICE ADMINISTRATION

Associate Degree Program

Minimum English skills requirement: Students must place in LE 100 on the English Placement Test prior to registering for their first semester courses.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
BZ 104	Keyboarding 1	3	3	4
BZ 105	Word Processing Editing	3		3
BZ 107	Telephone Communications/Records Mgmt.	3		3
LE 100	English Composition 1	3		3
NS 100	Intro. to Sociology (or)			
NP 100	General Psychology	3		3
		<hr/> 15	<hr/> 3	<hr/> 16

SEMESTER 2

BZ 102	Shorthand for the Electronic Office 1	3	2	4
BZ 204	Intermediate Keyboarding	3	3	4
BZ 206	Basic Word Processing Applications	3		3
BZ 245	Micronumerics	3		3
LE 200	English Comp. 2: Intro. to Literature	3		3
		<u>15</u>	<u>5</u>	<u>17</u>

SEMESTER 3

BB 310	Business Law 1	3		3
BD 301	Microcomputer Applications for Windows	3		3
BZ 307	Admin. Office Practices & Procedures	3		3
BZ 408	Advanced Word Processing	3		3
	Elective: Social Science	3		3
		<u>15</u>		<u>15</u>

SEMESTER 4

BP 101	Office Accounting	3		3
BZ 304	Machine Transcription	3		3
BZ 401	Advanced Keyboarding	3		3
LE 201	Business English	3		3
	Elective: general education (Note 1)	3		3
	Elective: general education	3		3
		<u>18</u>		<u>18</u>

Suggested electives:

BK 110 Principles of Management
 BK 312 Women, Management, Leadership
 BZ 497 Office Cooperative Education
 Humanities/Social Science

Note 1: Humanities, social science, or math elective

Upon the successful completion of requirements for this program, the degree of **Associate in Science in Office Administration-Executive** will be awarded.

LEGAL OFFICE ADMINISTRATION**Associate Degree Program**

This program prepares men and women for the very specialized atmosphere and demands of the executive and legal office administration profession. The legal program emphasizes Gregg Shorthand, Gregg Legal Shorthand, and legal terminology. The severe national shortage of office personnel, the rapid technological advances in office automation and office administration, and the new opportunities for increased earning potential and career advancement make Office Administration an excellent choice for business training. Perfect for the highly-motivated individual seeking variety and challenge in a prestigious and exciting field.

Minimum English skills requirement: Students must place in LE 100 on the English Placement Test prior to registering for the first semester courses.

OFFICE ADMINISTRATION

SEMESTER 1

No.	Course Title	Class	Lab	Credits
BZ 104	Keyboarding 1	3	3	4
BZ 105	Word Processing Editing	3		3
BZ 107	Telephone Communications/Records Mgmt.	3		3
LE 100	English Composition 1	3		3
NS 100	Introduction to Sociology (or)			
NP 100	General Psychology	3		3
		<u>15</u>	<u>3</u>	<u>16</u>

SEMESTER 2

BZ 102	Shorthand for the Electronic Office 1	3	2	4
BZ 204	Intermediate Keyboarding	3	3	4
BZ 206	Basic Word Processing Applications	3		3
BZ 245	Micronumerics	3		3
LE 200	English Comp. 2: Into. to Literature	3		3
		<u>15</u>	<u>5</u>	<u>17</u>

SEMESTER 3

BB 310	Business Law 1	3		3
BZ 202	Shorthand for the Electronic Office 2	3	2	4
BZ 307	Admin. Office Practices & Procedures	3		3
BZ 408	Advanced Word Processing	3		3
	Elective: Social Science	3		3
	Elective: general education	3		3
		<u>18</u>	<u>2</u>	<u>19</u>

SEMESTER 4

BL 305	Legal Shorthand Terminology	3		3
BZ 304	Machine Transcription	3		3
BZ 402	Shorthand for the Electronic Office 3	6		4
LE 201	Business English	3		3
	Elective: general education (Note 1)	3		3
		<u>18</u>		<u>16</u>

Suggested electives:

- BA 110 Accounting 1
- BK 110 Principles of Management
- BK 312 Women, Management, Leadership
- BZ 405 Information Processing Office Management
- BZ 497 Office Cooperative Education
- BP 101 Office Accounting 1
- Humanities/Social Science

Note 1: Humanities, social science or math elective

Upon the successful completion of requirements for this program, the degree of **Associate in Science in Office Administration-Legal** will be awarded.

MEDICAL OFFICE ADMINISTRATION**Associate Degree Program**

This program prepares men and women for the highly-specialized, non-clinical medical office environment. With an extensive medical office administration background, this graduate may perform executive/legal functions in such places as hospitals, medical centers, research centers, pharmaceutical and medical publishing houses, large corporations, and other business offices requiring a skilled and knowledgeable medical professional.

Perfect for the medically-minded individual desiring non-clinical employment in the fascinating, challenging, and highly specialized field of medicine.

Minimum English skills requirement: Students must place in LE 100 on the English Placement Test prior to registering for their first semester courses.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
BZ 104	Keyboarding 1	3	3	4
BZ 105	Word Processing Editing	3		3
BZ 107	Telephone Communications/Records Mgmt.	3		3
LE 100	English Composition 1	3		3
NP 100	General Psychology (or)			
NS 100	Introduction to Sociology	3		3
		<hr/> 15	<hr/> 3	<hr/> 16

SEMESTER 2

BZ 102	Shorthand for the Electronic Office 1	3	2	4
BZ 204	Intermediate Keyboarding	3	3	4
BZ 206	Basic Word Processing Applications	3		3
BZ 245	Micronumerics	3		3
LE 200	English Comp. 2: Intro. to Literature	3		3
		<hr/> 15	<hr/> 5	<hr/> 17

SEMESTER 3

AA 101	Medical Terminology 1	3		3
BM 307	Medical Office Practices and Procedures	3		3
BP 311	Medical Law and Ethics	1		1
BZ 406	Advanced Word Processing	3		3
MB 143	Fundamentals of Anatomy & Physiology 1	3		3
	Elective: general education	3		3
		<hr/> 16		<hr/> 16

SEMESTER 4

BM 305	Medical Keyboarding	3		3
BM 454	Medical Machine Transcription	3		3
BP 101	Office Accounting 1	3		3
LE 201	Business English	3		3
MB 243	Fundamentals of Anatomy & Physiology 2	3		3
		<hr/> 15		<hr/> 15

OFFICE ADMINISTRATION

Suggested electives:

BK 110 Principles of Management

BK 312 Women, Management, Leadership

BZ 497 Office Cooperative Education

Humanities/Social Science

Upon the successful completion of requirements for this program, the degree of **Associate in Science in Office Administration-Medical** will be awarded.

WORD PROCESSING MANAGEMENT

Associate Degree Program

This program prepares men and women to assume entry-level management positions in today's information processing business environment. Specific courses in integrated information processing, office information systems, management, supervision, and communications prepare graduates to operate and supervise information processing facilities.

Minimum English skills requirement: Students must place in LE 100 on the English Placement Test and MM 093 on the Math Placement Test prior to registering for their first semester courses.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
BD 301	Microcomputer Applications for Windows	3		3
BZ 104	Keyboarding 1	3	3	4
BZ 105	Word Processing Editing	3		3
LE 100	English Composition 1	3		3
MM 097	Lecture Math 2	3		3
		<hr/> 15	<hr/> 3	<hr/> 16

SEMESTER 2

BZ 204	Intermediate Keyboarding	3	3	4
BZ 206	Basic Word Processing Applications	3		3
LE 200	English Comp. 2: Intro. to Literature	3		3
MM 143	Business Statistics 1	3		3
NP 100	General Psychology	3		3
		<hr/> 15	<hr/> 3	<hr/> 16

SEMESTER 3

BA 110	Accounting 1	5		4
BB 310	Business Law 1	3		3
BK 110	Principles of Management	3		3
BZ 408	Advanced Word Processing	3		3
LE 203	Fundamentals of Speech	3		3
		<hr/> 17		<hr/> 16

SEMESTER 4

BZ 427	Organizational Behavior	3	3
LE 202	Technical Report Writing	3	3
NE 100	Principles of Economics 1	3	3
	Elective (Note 1)	3	3
	Elective (Note 1)	3	3
		<u>15</u>	<u>15</u>

Note (1) Suggested electives:

BD 314 Database Systems
 BD 315 Advanced Spreadsheets
 BD 320 Desktop Publishing
 BK 312 Women, Management, Leadership
 BZ 107 Telephone Communications/Records Management
 BZ 245 Micronumerics
 BZ 401 Advanced Keyboarding
 BZ 304 Machine Transcription
 BW 497 Word Processing Cooperative Education
 Humanities/Social Science/Math

Upon the successful completion of requirements for this program, the degree of **Associate in Science in Word Processing Management** will be awarded.

CLERICAL OFFICE ASSISTANT**Certificate Program**

This one-year program prepares men and women for basic office responsibilities. This is an especially good program for students with undefined career goals and/or the need to enter the job market as soon as possible. Most credits can be transferred into the Executive Office Administration program.

Minimum English skills requirement: Students must place in LE 100 on the English Placement Test prior to registering for their first semester courses.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
BZ 104	Keyboarding 1	3	3	4
BZ 105	Word Processing Editing	3		3
BZ 107	Telephone Communications/Records Mgmt.	3		3
BZ 307	Admin. Office Practices & Procedures	3		3
LE 100	English Composition 1	3		3
		<u>15</u>	<u>3</u>	<u>16</u>

SEMESTER 2

BZ 204	Intermediate Keyboarding	3	3	4
BZ 206	Basic Word Processing Applications	3		3
BZ 245	Micronumerics	3		3
LE 201	Business English	3		3
	Elective: (Note 1)	3		3
		<u>15</u>	<u>3</u>	<u>16</u>

OFFICE ADMINISTRATION

Note 1: Suggested electives:

BD 300 Microcomputer Applications

BK 110 Principles of Management

BK 312 Women, Management, Leadership

BP 101 Office Accounting 1

Humanities/Social Science/Math

Upon the successful completion of requirements of this program, a **Certificate in Clerical Office Assistant** will be awarded.

MEDICAL TRANSCRIPTION

Certificate of Completion program

This program is designed for persons interested in working in a physician's office, neighborhood health clinic, hospital, or other allied health organizations as a medical transcriptionist. The program will also train students for the progressive employment initiative of telecommuting, that involves shifting employees from working on site to working from their homes via tele and data communications. Prior to admission, students must have completed a course in keyboarding with a rate of 45 wpm, or take BZ 104 and/or BZ 300.

No.	Course Title	Credits
AA 101	Medical Terminology 1	3
BL 305	Legal Shorthand Terminology	3
BM 454	Medical Machine Transcription	3
BZ 105	Word Processing Editing	3
BZ 206	Basic Word Processing Applications	3
BM 305	Medical Keyboarding	3
MB 143	Fundamentals of Anatomy & Physiology 1	3
MB 243	Fundamentals of Anatomy & Physiology 2	3
BM 456	Advanced Medical Machine Transcription	3
		<hr/> 27

Upon successful completion of the requirements for this program, a **Certificate of Completion in Medical Transcription** from STCC will be awarded.

WORD PROCESSING

Certificate of Completion program

This program is designed for persons interested in office work as entry-level word processors. This is an especially good program for students who need to enter the job market as soon as possible. Prior to admission, students must have completed a course in keyboarding with a rate of 40 wpm or enroll in BZ 104.

OFFICE ADMINISTRATION

No.	Course Title	Credits
BD 301	Microcomputer Applications for Windows	3
BD 320	Desktop Publishing	3
BZ 105	Word Processing Editing	3
BZ 204	Intermediate Keyboarding	4
BZ 206	Basic Word Processing Applications	3
BZ 304	Machine Transcription	3
BZ 408	Advanced Word Processing	3
LE100	English Composition 1	3
LE 201	Business English	3
		<hr/> 28

Upon successful completion of the requirements of this program, a **Certificate of Completion in Word Processing** from STCC will be awarded.

Descriptions of courses offered by this department begin on page 288.

Engineering and Science Transfer



Biotechnology

Associate Degree Program

The Biotechnology curriculum is designed to meet the ever-expanding needs for trained personnel in the field of biotechnology. The commonwealth of Massachusetts currently ranks third in the country among areas with a high concentration of biotechnology companies. There are now 79,000 employees in the industry, with expectations of over 200,000 by the year 2000. Students have the option of selecting the transfer or career options listed below.

Upon successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Biotechnology** will be awarded.

Transfer Compact Option

The Biotechnology/Transfer Compact Option has been designed to meet the transfer requirements of four-year public colleges or universities that are members of the Commonwealth Transfer Compact, or those colleges that are accredited by the AACSB. All course choices should be discussed with the College's transfer counselor or your advisor, as different institutions may vary in their particular program requirements.

Career Option

The Biotechnology Career Option concentrates on the methodology and techniques of microbiology, biochemistry, cell biology, genetics, and cell culture. Career option graduates will be qualified for positions such as lab assistant, research assistant, media prep technician, quality control inspector, safety technician, manufacturing technician, and documentation specialist.

Entrance Requirements

In order to be admitted to the Biotechnology program, an applicant should have completed two years of algebra, one year of geometry, and one year of trigonometry or senior math, and one year each of chemistry, biology, and physics with a grade of "B" or better. Applicants should also have achieved a minimum of 800 combined SAT score.

Applicants not meeting all the entrance requirements may still be considered, but should understand that it might require additional time and effort on their part in order to prepare themselves for the required mathematics and science courses. Applicants not deemed ready to enter the program are offered an alternate acceptance to the General Studies program. Students typically spend one year in this core remedying their academic deficiencies in the mathematics and sciences, and then reapply to the Biotechnology program.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
BD 195	Computer Concepts for Technologies	2	2	3
MM 155	Calculus 1 (Note 1)	6		4
MC 103	General Chemistry 1	3	3	4
MB 106	General Biology 1	3	3	4
LE 100	English Composition 1	3		3
		<hr/> 17	<hr/> 8	<hr/> 18

BIOTECHNOLOGY

SEMESTER 2

MB 151	Intro. to Biotechnology	1		1
MC 203	General Chemistry 2	3	3	4
MM 255	Calculus 2 (Note 1)	6		4
NP 100	General Psychology	3		3
MB 206	General Biology 2	3	3	4
		<hr/>	<hr/>	<hr/>
		16	6	16

SEMESTER 3

LE 202	Technical Report Writing	3		3
MB 121	Microbiology	3	3	4
MC 320	Organic Chemistry 1 (Note 2)	3	4	4
MB 351	Cell Biology	3	3	4
		<hr/>	<hr/>	<hr/>
		12	10	15

SEMESTER 4

MC 420	Organic Chemistry 2 (Note 3)	3	4	4
MB 251	Biotechnology	3	3	4
MB 360	Genetics	3	3	4
	Elective: Social Science	3		3
		<hr/>	<hr/>	<hr/>
		12	10	15

Note 1: Career option students should take MM 132 and MM 232 instead.

Note 2: Career option students should take MB 140 instead.

Note 3: Career option students should take MM 140 instead.

ENGINEERING AND SCIENCE TRANSFER

The Engineering and Science Transfer Program was established in 1968 to provide students with the university parallel courses needed to pursue a baccalaureate degree in engineering or science. In addition to completing the first two years of a baccalaureate degree, the student receives the degree of Associate in Science in Engineering and Science Transfer with the following concentrations:

Engineering	ME-1
Computer Science	ME 2
Technical Engineering	ME-3
Biology	ME-4
Chemistry	ME-5
Physics/Mathematics	ME-6
Pre-med/Pre-dental/Pre-vet	ME-7
Pre-pharmacy	ME-8

STCC's Engineering and Science Transfer department has been recognized as a Center for Excellence in Engineering, and annually transfers students to four-year colleges and universities all across the country. Locally, the Engineering and Science Transfer program participates in the Joint Admission program with the University of Massachusetts, and has 2+2 articulation agreements with Western New England College, Worcester Polytechnic Institute, and Rensselaer Polytechnic Institute. RPI also annually presents the RPI Medal Award to one of the outstanding graduates of STCC's Engineering and Science Transfer program. This medal is accompanied by a substantial financial aid award to attend RPI.

STCC's Engineering and Science Transfer department is one of the leaders in integrating the computer with the curricula. AT&T has recognized these efforts with a donation of a completely networked, state-of-the-art microcomputer laboratory. STCC was one of only two community colleges in the nation to receive a donation from AT&T's University Equipment Donation program. Through this laboratory, students have access to the most modern software in computer languages (Pascal, Fortran, C), word processing, spreadsheets, CAD/CAM and other numerous mathematical analysis and simulation packages. Students also utilize modern labs in chemistry, physics, electronics, and materials sciences.

Entrance Requirements

In order to be admitted to one of the Engineering and Science Transfer programs, an applicant should have completed two years of algebra, one year of geometry, one year of trigonometry or senior math, and one year each of chemistry, biology, and physics with grades of "B" or better. Applicants should also have achieved minimum SAT scores of 500 in math and 350 in English.

Applicants not meeting all of the entrance requirements may still be considered, but should understand that it might require additional time and effort on their part in order to prepare themselves for the required mathematics and science courses in the Engineering and Science Transfer programs. Applicants not deemed ready to enter the program are offered an alternate acceptance to the General Studies program Pre-Engineering core. Students typically spend one year in this core remedying their academic deficiencies in the mathematics and sciences, and then reapply to the Engineering and Science Transfer program.

Engineering Transfer Option

Associate Degree Program

SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MC 103	General Chemistry 1	3	3	4
ME 108	Intro. to Computing (Pascal) (or)			
ME 203	Computer Applications in Engineering	3	3	4
MM 155	Calculus 1	6		4
	Elective: Social Science	3		3
		<hr/> 18	<hr/> 6	<hr/> 18

SEMESTER 2

MP 132	University Physics 1	3	3	4
MC 203	General Chemistry 2	3	3	4
MM 255	Calculus 2	6		4
ME 108	Pascal (or)			
ME 203	Comp. Applic. in Engineering (or)			
MK 203	The C Programming Language	3	3	4
	Elective: English	3		3
		<hr/> 18	<hr/> 9	<hr/> 19

ENGINEERING TRANSFER OPTION

SEMESTER 3

MP 232	University Physics 2	3	3	4
	Elective: Math, Science, or Engineering	3		3
	Elective: Engineering	3		3
MM 355	Calculus 3	6		4
	Elective Social Science or Humanities	3		3
		<hr/> 18	<hr/> 3	<hr/> 17

SEMESTER 4

	Elective: Engineering	3		3
	Elective: Engineering	3		3
	Elective: Math, Science, or Engineering	3		3
MM 439	Linear Algebra (or)			
MM 455	Differential Equations	4		4
	Elective: Social Science or Humanities	3		3
		<hr/> 16		<hr/> 16

By choosing the appropriate math, science, and engineering electives in the 3rd and 4th semesters, a student can major in Chemical, Civil, Computer, Electrical, Environmental, Industrial or Mechanical Engineering.

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Engineering and Science Transfer** will be awarded.

Descriptions of courses offered by this department begin on page 240.

Computer Science Transfer Option

Associate Degree Program

SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MC 103	General Chemistry (or)			
MP 132	University Physics 1 *	3	3	4
ME 108	Intro. to Computing (Pascal) (or)			
MK 103	Intro. to Computer Programming 1	3	3	4
MM 155	Calculus 1	6		4
	Elective: Social Science	3		3
		<hr/> 18	<hr/> 6	<hr/> 18

SEMESTER 2

LE 200	Composition 2: Intro. to Lit.	3		3
MC 203	General Chemistry 2 (or)			
MP 232	University Physics 2 *	3	3	4
MK 203	The C Programming Language	3	3	4
MM 255	Calculus 2	6		4
	Elective: Humanities or Soc. Science	3		3
		<hr/> 18	<hr/> 6	<hr/> 18

SEMESTER 3

MK 320	Computer Organization & Digital Logic	3		3
MK 401	Data Structures & Algorithms	3	3	4
	Elective: General Education **	3		3
	Elective: Soc. Science or Humanities	3		3
	Elective: Mathematics	3		3
		<hr/> 15	<hr/> 3	<hr/> 16

SEMESTER 4

MM 439	Linear Algebra	3		3
MK 310	Machine and Assembly Language	3	3	4
	Elective: Humanities or Social Science	3		3
	Elective: Mathematics	3		3
	Elective: General Education **	3		3
		<hr/> 15	<hr/> 3	<hr/> 16

* Students intending to transfer to the University of Massachusetts should take MP 132 and MP 232.

** General education electives must be courses that will transfer to a four-year computer science curriculum.

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Engineering and Science Transfer** will be awarded.

Descriptions of courses offered by this department begin on page 214.

Technical Engineering Option

Associate Degree Program

The Technical Engineering Option is a general technology program. It is for students who do not want to major in any specific technology but want a broad background. If, after spending one year in this option, a student becomes interested in a specific technology, it is possible for him to transfer to that technology.

This program is also designed to interface with both the Engineering Transfer Program and the Pre-Engineering Option (Level 2) of the General Studies Program. A student, after spending one year in either of these programs, may transfer to the Technical Engineering option with no loss of credit. A student who completes the entire Technical Engineering option is awarded the **Associate in Science Degree in Engineering and Science Transfer**.

TECHNICAL ENGINEERING OPTION

SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MC 100	College Chemistry (or)			
MC 103	General Chemistry 1	3	3	4
MM 150	Pre-Calculus Math 1 (or)			
MM 155	Calculus 1	6		4
MP 130	College Physics 1 (or)			
MP 132	University Physics 1	3	3	4
FB 135	Mechanical Drawing (or)			
HP 132	Engineering Graphics 331	1	3	2
		16	9	17

SEMESTER 2

LE 202	Technical Report Writing	3		3
FB 230	CAD Level 1	2	3	3
MM 250	Pre-Calculus Math 2 (or)			
MM 255	Calculus 2	6		4
MP 230	College Physics 2 (or)			
MP 232	University Physics 2	3	3	4
	Elective: Humanities/Soc. Science	3		3
		17	6	17

SEMESTER 3

MM 155	Calculus 1 (or)			
MM 355	Calculus 3	4		4
BD 195	Computer Concepts/Technical (or)			
ME 203	Computer Applications in Engineering	3	3	4
ET 130	Circuit Theory 1 (or)			
ME 320	Circuit Analysis 1 (and)	4		3
ME 324	Electrical Engineering Lab 1		3	1
FB 221	Mechanics (or)			
ME 310	Mechanics 1	3		3
	Elective: Math/Science/Technical	3		3
		17	6	18

SEMESTER 4

FB 321	Strength of Materials (or)			
ME 335	Mechanics of Materials	1	4	3
MM 255	Calculus 2 (or)			
MM 455	Differential Equations	6		4
BD 105	Pascal (or)			
ME 108	Introduction to Computing (Pascal)	3	3	4
ET 230	Circuit Theory 2 (or)			
ME 420	Circuit Analysis 2 (and)	4		3
ME 427	Electrical Engineering Lab 2		3	1
	Elective: Math/Science/Technical	3		3
		17	10	18

Science Transfer Option

Associate Degree Program

BIOLOGICAL SCIENCES TRANSFER PROGRAMS

Springfield Technical Community College offers several biology transfer programs from which its graduates are well-qualified to enter the junior year of a biology major, pre-med major, pre-vet major, pre-dental major, or a pharmacy major. Students are advised by biology faculty members who will guide them in course selections to meet the requirements of the various colleges and universities to which the students may apply.

Students who cannot meet all the requirements for the degree of Engineering and Science Transfer may consider the option of an Associate degree in Liberal Arts Transfer or General Studies, while pursuing the goal of transferring to a four-year college to continue studies in the biological sciences.

Biology Option

SEMESTER 1

No.	Course Title	Class	Lab	Credits
MC 103	General Chemistry 1	3	3	4
MB 106	Biology 1	3	3	4
LE 100	English Composition 1	3		3
NS 100	Intro. to Sociology	3		3
MM 155	Calculus 1 (or)			
MM 150	Pre-Calculus Math 1	6		4
		<hr/> 18	<hr/> 6	<hr/> 18

SEMESTER 2

MC 203	General Chemistry 2	3	3	4
MB 206	Biology 2	3	3	4
LE 200	Comp. 2: Intro. to Lit.	3		3
NP 100	General Psychology	3		3
MM 255	Calculus 2 (or)			
MM 250	Pre-Calculus Math 2	6		4
		<hr/> 18	<hr/> 6	<hr/> 18

SEMESTER 3

MC 320	Organic Chemistry 1	3	4	4
	Elective: Biology (Note 1)	3	3	4
	Elective: Social Science	3		3
MM 155	Calculus 1 (or)			
MM 355	Calculus 3	4		4
MP 130	College Physics 1	3	3	4
		<hr/> 16	<hr/> 10	<hr/> 19

SCIENCE TRANSFER OPTION

SEMESTER 4

MC 420	Organic Chemistry 2	3	4	4
MB 360	Genetics	3	4	4
	Elective: Humanities	3		3
MM 255	Calculus 2 (or)			
MM 140	Statistics and Quality Control	3		3
MP 230	College Physics 2	3	3	4
		15	11	18

Note 1: Electives to be selected from: MB 121, MB 132, MB 310, MB 320, MB 350

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Engineering and Science Transfer** will be awarded.

Pre-Med/Pre-Dental/Pre-Vet Option

SEMESTER 1

No.	Course Title	Class	Lab	Credits
MC 103	General Chemistry 1	3	3	4
MB 106	Biology 1	3	3	4
LE 100	English Composition 1	3		3
NS 100	Intro. to Sociology	3		3
MM 150	Pre-Calculus 1 (or)			
MM 155	Calculus 1	6		4
		18	6	18

SEMESTER 2

MC 203	General Chemistry 2	3	3	4
MB 206	Biology 2	3	3	4
LE 200	Comp. 2: Intro. to Lit.	3		3
MM 250	Pre-Calculus 2 (or)			
MM 255	Calculus 2	6		4
NP 100	General Psychology	3		3
		18	6	18

SEMESTER 3

MP 130	College Physics 1	3	3	4
MC 320	Organic Chemistry 1	3	4	4
	Elective: Biology (Note 1)	3	3	4
	Elective: Social Science	3		3
	Elective: General Education (Note 2)	3		3
		15	10	18

SEMESTER 4

MB 360	Genetics 2	3	4	4
MC 420	Organic Chemistry 2	3	4	4
MP 230	College Physics 2	3	3	4
	Elective: Humanities	3		3
	Elective: General Education (Note 2)	3		3
		15	11	18

SCIENCE TRANSFER OPTION

Note 1: Electives to be selected from: MB 121, MB 132, MB 310, MB 320, MB 350.

Note 2: Check curriculum of school you plan to attend to determine what this elective should be.

Upon the successful completion of the requirements for this program, as listed above, the degree of **Associate in Science in Engineering and Science Transfer** will be awarded.

Pre-Pharmacy Option

SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MC 103	General Chemistry 1	3	3	4
MB 106	Biology 1	3	3	4
MM 150	Pre-Calculus 1 (or)			
MM 155	Calculus 1	4		4
	Elective: Social Science (Note 1)	3		3
		<hr/> 16	<hr/> 6	<hr/> 18

SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
MC 203	General Chemistry 2	3	3	4
MB 206	Biology 2	3	3	4
MM 140	Statistics and Quality Control (or)			
MM 142	Statistics (or)			
MM 143	Business Statistics	3		3
	Elective: Social Science (Notes 1 & 2)	3		3
		<hr/> 15	<hr/> 6	<hr/> 17

SEMESTER 3

MP 130	College Physics 1	3	3	4
MC 320	Organic Chemistry 1	3	4	4
AA 101	Med. Terminology 1	3		3
NS 100	Intro. to Sociology	3		3
	Elective: Humanities/Soc. Science (Note 2)	3		3
		<hr/> 15	<hr/> 7	<hr/> 17

SEMESTER 4

MP 230	College Physics 2	3	3	4
MC 420	Organic Chemistry 2	3	4	4
MB 121	Microbiology	3	2	3
	Elective: Humanities/Soc. Sci. (Note 1)	3		3
	Elective: General Education	3		3
		<hr/> 15	<hr/> 9	<hr/> 17

Note 1: Most pharmacy schools require NE 100 Principles of Economics; NH 100 Survey of Modern Western Civilization for social science/humanities electives.

Note 2: Check the curriculum of the school you plan on attending to determine what this elective should be.

SCIENCE TRANSFER OPTION

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Engineering and Science Transfer** will be awarded.

Chemistry Option

SEMESTER 1

No.	Course Title	Class	Lab	Credits
MC 103	General Chemistry 1	3	3	4
LE 100	English Composition 1	3		3
	Elective: Humanities/Soc. Sci. (Note 1)	3		3
MM 155	Calculus 1	6		4
ME 203	Computer Applications in Engineering	3	3	4
		<hr/> 18	<hr/> 6	<hr/> 18

SEMESTER 2

MC 203	General Chemistry 2	3	3	4
LE 200	Comp. 2: Intro. to Lit.	3		3
MM 255	Calculus 2	6		4
	Elective: Humanities/Soc. Sci. (Note 1)	3		3
	Elective: Math/Science/Technical (Note 2)	3		3
		<hr/> 18	<hr/> 3	<hr/> 17

SEMESTER 3

MC 320	Organic Chemistry 1	3	4	4
MP 130	College Physics 1 (or)			
MP 132	University Physics 1	3	3	4
MM 355	Calculus 3	4		4
	Elective: Social Science/Humanities (Note 1)	3		3
	Elective: Math/Science/Technical (Note 2)	3		3
		<hr/> 16	<hr/> 7	<hr/> 18

SEMESTER 4

MC 420	Organic Chemistry 2	3	4	4
	Elective: Technical/Math/Science (Note 2)	3		3
	Elective: Social Science/Humanities (Note 1)	3		3
MM 455	Differential Equations	6		4
MP 230	College Physics 2 (or)			
MP 232	University Physics 2	3	3	4
		<hr/> 18	<hr/> 7	<hr/> 18

Note 1: Most four-year institutions require two years of a foreign language. Check the curriculum of the school you plan to attend for specific details regarding these electives.

Note 2: Check the curriculum of the school you plan to attend to determine what this elective should be.

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Engineering and Science Transfer** will be awarded.

Physics/Mathematics Option**SEMESTER 1**

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
	Elective: Humanities/Soc. Sci. (Note 1)	3		3
MM 155	Calculus 1	6		4
ME 108	Intro. to Computing (Pascal)	3	3	4
MC 103	General Chemistry 1	3	3	4
		<hr/> 18	<hr/> 6	<hr/> 18

SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
MM 255	Calculus 2	6		4
	Elective: Humanities/Soc. Sci. (Note 1)	3		3
MC 203	General Chemistry 2	3	3	4
MP 132	University Physics 1	3	3	4
		<hr/> 18	<hr/> 6	<hr/> 18

SEMESTER 3

	Elective: General Education (Note 1)	3		3
	Elective: Social Science/Humanities (Note 1)	3		3
MM 355	Calculus 3	6		4
MP 232	University Physics 2	3	3	4
	Elective: Technical/Math/Science (Note 2)	3		3
		<hr/> 18	<hr/> 3	<hr/> 17

SEMESTER 4

	Elective: Soc. Sci./Humanities (Note 1)	3		3
MM 455	Differential Equations	6		4
MP 332	University Physics 3 (or)			
MM 439	Linear Algebra	3		3
	Elective: General Education (Note 2)	3		3
	Elective: Technical/Math/Science (Note 2)	3		3
		<hr/> 18		<hr/> 16

Note 1: Most four-year institutions require two years of a foreign language. Check the curriculum of the school you plan to attend for specific details regarding this elective.

Note 2: Check curriculum of school you plan to attend to determine what this elective should be.

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Engineering and Science Transfer** will be awarded.

SCIENCE TRANSFER OPTION

TECHNICAL ENGINEERING

Certificate of Completion program

SEMESTER 1

No.	Course Title	Class	Lab	Credits
BD 300	Microcomputer Applications for DOS	3		3
LE 100	English Composition 1	3		3
MC 101	Survey of Chemistry 1	3	3	4
ME 109	Intro. to Engineering Graphics		3	1
MM 132	Technical Mathematics 1	4		4
		<hr/> 13	<hr/> 6	<hr/> 15

SEMESTER 2

LE 202	Technical Report Writing	3		3
MC 201	Survey of Chemistry 2	3	3	4
ME 106	Intro. to Computer-Aided Drafting	1	2	1
ME 421	Engineering Measurements and Analysis	2	3	2
MM 142	Statistics	3		3
		<hr/> 12	<hr/> 8	<hr/> 13

Upon successful completion of requirements for this program, a **Certificate of Completion in Technical Engineering** from STCC will be awarded.

Engineering Technologies



Automotive Technology

Associate Degree Program

The automotive service technician of today is required to have a strong background in electrical, electronics, mathematics, and science in order to understand and diagnose new computerized control systems, and to keep pace with the ever-changing technology in the automotive industry.

The STCC Automotive Technology program is affiliated with Ford Motor Company's ASSET (Automotive Student Service Educational Training) program. In this two-year program, students will receive instruction in 9-week cycles in the classroom and laboratory, alternating with 9 weeks of paid cooperative education experiences at participating Ford-Lincoln/Mercury dealerships. Students must be accepted into this program by both STCC and a sponsoring dealership. Students will be required to acquire a basic set of tools initially, with additional purchases as required.

A knowledge of scientific principles and technical information is emphasized so that students can understand why mechanical, electronic, and other technical malfunctions occur. Major areas of instruction include engines, transmissions, differentials, brakes, suspensions, fuel systems, electrical systems, and the computerized control systems that monitor all of the above. Emphasis on diagnosing and servicing these systems will be stressed.

This program is open for new students every other year. The next class will be admitted for the fall of 1997. Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Automotive Technology** will be awarded.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
IA 110	Gasoline Engine Systems	2	3	3
IA 330	Brakes and Suspension	2	3	3
IA 130	Intro. to Automotive Service	1	2	2
MM 101	Mathematics	1		1
MM 102	Mathematics	1		1
MM 103	Mathematics	1		1
	Elective: General	3		3
		<hr/> 11	<hr/> 8	<hr/> 14

SEMESTER 2

LE 100	English Composition 1	3		3
IA 210	Gasoline Engines Service	2	3	3
ET 240	Automotive Electronics 1	3	3	4
IA 310	Fuel and Electric Systems	2	3	3
IA 335	Automotive Schematic Reading		3	1
		<hr/> 10	<hr/> 12	<hr/> 14

SUMMER SESSION

IA 120	Driveline and Air Conditioning	2	3	3
BK 112	Managerial Supervision	3		3
		<hr/> 5	<hr/> 3	<hr/> 6

SEMESTER 3

BD 195	Computer Concepts/Technical	2	2	3
ET 345	Automotive Electronics 2	2	3	3
IA 220	Automatic Transmissions	2	3	3
IA 420	Engine Diagnosis and Tune-Up	2	3	3
NP 109	Human Relations	3		3
MP 119	Technical Physics	3	3	4
		<hr/> 14	<hr/> 14	<hr/> 19

SEMESTER 4

IA 430	Advanced Automotive Systems	2	3	3
LE 202	Technical Report Writing	3		3
NE 100	Economics 1	3		3
IA 432	Applied Automotive Electronics	2	3	3
	Elective: General	3		3
		<hr/> 13	<hr/> 6	<hr/> 15

Descriptions of courses offered by this department begin on page 184.

Biomedical Instrumentation Technology

Associate Degree Program

Instrumentation is being used increasingly in medical, biological and research fields. This equipment has become so complex that technicians must have a detailed knowledge of biomedical procedures and biomedical terminology so that proper functioning of the equipment and safety of the patient can be assured. The program provides the general technical knowledge and understanding of the more commonly used biomedical instruments, components, systems and circuit techniques. Minimum Grade Requirement: Biomedical Technology students shall maintain a minimum grade of "C" (2.0) for all departmental courses. A grade of "C" or lower will be considered a poor level of performance in any course. Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Biomedical Instrumentation Technology** will be awarded.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
	Elective: Social Science	3		3
EB 120	Measuring Principles 1	2	3	3
ET 110	Basic Electronics 1	3		3
ET 115	Electronics Lab 1		4	2
MM 132	Technical Mathematics 1	3		3
		<hr/> 14	<hr/> 7	<hr/> 17

BIOMEDICAL INSTRUMENTATION TECHNOLOGY

SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
EB 230	Measuring Principles 2	2	3	3
ET 210	Basic Electronics 2	3		3
ET 220	Active Networks 1	3		3
ET 215	Electronics Lab 2		4	2
ET 111	Intro. to Computer-Aided Engineering Tech.	2	3	3
		<u>13</u>	<u>10</u>	<u>17</u>

SEMESTER 3

EB 310	Biomed. Systems 1	3		3
EB 340	Digital Electronics Lab		4	2
EB 350	Digital Electronics	3		3
LE 202	Technical Report Writing	3		3
MC 100	College Chemistry	3	3	4
	Elective: social science	3		3
		<u>15</u>	<u>7</u>	<u>18</u>

SEMESTER 4

EB 410	Biomed. Systems 2	3		3
EB 420	Instrumentation Project (or)			
EB 450	Biomedical Internship	1	2	2
EB 430	Codes/Law/Safety	1		1
EB 440	Integrated Circuits	3		3
EE 451	Microprocessor Applications	2	3	3
MB 136	Applied Physiology	3	3	4
		<u>13</u>	<u>8</u>	<u>16</u>

Descriptions of courses offered by this department begin on page 192.

Civil Engineering Technology

Associate Degree Program

The Civil Engineering Technology program provides a broad engineering background for persons wanting to work in industries that require knowledge in design, surveying, drafting, CAD, and estimating. Aspects of construction techniques, soils engineering, field and materials testing, and construction/project management are included in the curriculum. Design of residential and light commercial structures are stressed. Elements of roadway design and layout are also covered. Graduates work for designers, engineers, large and small contractors, testing companies, and environmental service and cleanup companies. Some graduates work for public utilities, towns, and state agencies. Graduates enjoy an excellent placement record with challenging career growth opportunities.

Minimum grade requirements: Department courses shall be completed with a grade of "D" (63%) or better. A QPA of 2.0 must be achieved for graduation. To continue in the program, the math requirements listed below must be satisfied. Also, at the beginning of the third and fourth semesters, the student must have a QPA of 1.7 and 1.9 respectively. Failure to meet the academic standards will result in academic probation.

Upon successful completion of the program requirements listed below, the degree of **Associate in Science in Civil Engineering Technology** will be awarded.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MM 132	Technical Mathematics 1 (note 1)	4		4
BD 195	Computer Concepts for Technologies	2	2	3
GC 105	Civil Engineering Seminar	1		1
GC 115	Construction Materials and Methods (note 3)	3		3
GC 120	Architectural Design and Specifications 1	2	6	4
		15	8	18

SEMESTER 2

LE 202	Technical Report Writing	3		3
MM 232	Technical Mathematics 2 (note 2)	4		4
MP 119	Technical Physics	3	3	4
GC 220	Construction Estimating	2	3	3
GC 235	Hydraulics and Hydrology (note 4)	2	3	3
		14	9	17

SEMESTER 3

MC 100	College Chemistry (note 7)	3	3	4
FB 230	CAD Level 1	2	4	3
GC 310	Surveying 1	2	6	4
GC 320	Soils and Foundations	3		3
GC 345	Statics and Strength of Materials	3	3	4
		13	16	18

SEMESTER 4

NE 100	Economics 1	3		3
GC 410	Reinforced Concrete Analysis (note 6)	2	3	3
GC 420	Construction Management	3		3
GC 430	Transportation Engineering (note 5)	2	3	3
GC 445	Structures (note 6)	3	3	4
GC 455	Civil Engineering Materials Testing	2	3	3
		15	12	19

NOTES:

- (1) Math MM 132 must be completed before any third or fourth semester Civil Engineering Technology (GC) courses can be taken.
- (2) Math MM 232 must be completed before any fourth semester Civil Engineering Technology (GC) courses can be taken. GC 420 is exempt from this requirement.
- (3) Must be at MM 091 (MM 097) and LD 099 or higher
- (4) Prerequisite: MM 087
- (5) GC 310 Surveying is a prerequisite
- (6) GC 345 Statics and Strength of Materials is a prerequisite

CIVIL ENGINEERING TECHNOLOGY

- (7) Potential transfer students intending to pursue BSCE degree should take MC 103 General Chemistry 1

ARCHITECTURAL TECHNOLOGY

Certificate of Completion program

SEMESTER 1

No.	Course Title	Class	Lab	Credits
BD 195	Computer Concepts/Technical	2	2	3
GC 105	Civil Engineering Seminar	1		1
GC 120	Architectural Design & Specifications 1	2	6	4
LE 100	English Composition 1	3		3
MM 101	Mathematics	1		1
MM 102	Mathematics	1		1
MM 103	Mathematics	1		1
		11	8	14

SEMESTER 2

FB 230	CAD Level 1	2	4	3
GC 220	Construction Estimating	2	3	3
GC 235	Hydraulics and Hydrology	2	3	3
GC 420	Construction Management	3		3
LE 202	Technical Report Writing	3		3
		12	10	15

Upon successful completion of the requirements of the program, a **Certificate of Completion in Architectural Technology** from STCC will be awarded.

Descriptions of courses offered by this department begin on page 205.

Computer Systems Engineering Technology

Associate Degree Program

Computer Systems Engineering Technology is a continually expanding field offering exciting careers in computer system design, automated manufacturing, maintenance, marketing, support, and management.

This curriculum is more involved than other, apparently similar, curricula offered in other locations. Systems-level courses are targeted at PC-AT architecture, Novell networking, Unix, and communications. Programming courses cover modern conventions in software design. Interfacing-level courses cover microprocessor interfacing, circuit theory, communications theory, and device driver programming. The result is a more complete background in computer systems than other curricula. The program is continually updated to reflect the state of the art in this field.

Graduates of this department will continue to assume major roles in a wide variety of professional areas as companies down-size from mainframe systems to distributed networks of smaller computers. Additional opportunities are available if the student decides to pursue a bachelor's degree in computer science or

COMPUTER SYSTEMS ENGINEERING TECHNOLOGY

electronic engineering technology. Transfer agreements have been developed and arrangements made with The University of Hartford, Rochester Institute of Technology, Wentworth Institute of Technology, and Westfield State College.

Students wishing to continue their education toward a bachelor of science degree in electrical engineering can participate in a 2+1+2 arrangement consisting of two years in the Computer Systems Engineering Technology program, one year in the Engineering and Science Transfer program, and two years at a four-year college or university. STCC currently participates in articulation agreements with Western New England College, Rensselaer Polytechnic Institute, Worcester Polytechnic Institute, and the University of Massachusetts at Amherst. Students completing this option will receive associate of science degrees sequentially in both Computer Systems Engineering Technology and Engineering and Science Transfer.

Minimum Grade Requirements: Students in Computer Systems Engineering Technology must receive a grade of "D" or better. A QPA of 2.0 must be achieved for graduation. Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Computer Systems Engineering Technology** will be awarded.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
ET 111	Intro. to Computer-Aided Engineering Technology	2	3	3
ET 130	Circuit Theory 1	3	3	4
LE 100	English Composition 1	3		3
MM 132	Technical Math 1	4		4
	Elective: Social Science	3		3
		<hr/> 15	<hr/> 6	<hr/> 17

SEMESTER 2

ED 241	Computer Programming	1	3	2
ET 230	Circuit Theory 2	3	3	4
ET 235	Digital Systems	3	3	4
LE 202	Technical Report Writing	3		3
MM 232	Technical Math 2	4		4
		<hr/> 14	<hr/> 9	<hr/> 17

SEMESTER 3

ED 333	Machine & Assembly Language Prog.	2	3	3
ED 340	Operating Systems	3		3
ED 342	Embedded Controllers 1	3	3	4
ED 343	Linear Circuits	3	3	4
LE 203	Fundamentals of Speech	3		3
		<hr/> 14	<hr/> 9	<hr/> 17

COMPUTER SYSTEMS ENGINEERING TECHNOLOGY

SEMESTER 4

ED 440	Microprocessor Interfacing	3	3	4
ED 442	Embedded Controllers 2	3	3	4
ED 444	Computer Networking	3		3
ED 451	Computer Peripherals	3		3
MP 119	Technical Physics	3	3	4
		<hr/> 15	<hr/> 9	<hr/> 18

NOTE: MM 132 and MM 232 must be completed and passed by the start of the third semester.

Descriptions of courses offered by this department begin on page 215.

Drafting Technology Certificate Program

This one-year certificate program is designed to train students for careers in the broad field of drafting. In industry, draftsmen translate the ideas, sketches, and specifications of engineers into workable plans. Graduates of this program will find employment as detailers, draftsmen, and design draftsmen.

Students in this program have the option of continuing their education one more year and obtaining the Associate in Science degree in Mechanical Engineering Technology.

Upon the completion of the requirements for the program, a Springfield Technical Community College **Certificate in Drafting and Design Technology** will be awarded.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MM 132	Technical Math 1	4		4
FA 112	Metal Machining 1	1	6	3
FB 135	Mechanical Drawing	2	3	3
FB 225	Intro. to CIM	3		3
		<hr/> 13	<hr/> 9	<hr/> 16

SEMESTER 2

GD 260	Graphics Design Lab	1	3	2
LE 202	Tech. Report Writing	3		3
FB 230	CAD Level 1	2	4	3
FB 110	Production Processes	3		3
FB 221	Mechanics	3		3
FB 224	Machine Design	2	3	3
MM 232	Technical Math 2	4		4
		<hr/> 18	<hr/> 10	<hr/> 21

Descriptions of courses offered by this department begin on page 275.

Electrical/Robotics Technology

Associate Degree Program

The Electrical/Robotics Technology program prepares students for work in the development, installation and maintenance of robotic and industrial automated systems.

The field of robotics and automation is concerned with automated machines controlled electrically by involving the coordinated use of hydraulics, electrical, pneumatic, and microcomputer elements. An investment in robotics presents many advantages to enterprises, including lower production costs and a quality of work not attainable by a human operator. With this in mind, the need for skilled technicians to install, maintain, and service these automated systems will be ever-increasing.

Minimum grade requirements: All "EE" series electrical technology courses must be successfully completed with a grade of "D" or better to graduate. These courses must be taken in sequential order. That is, second semester courses cannot be taken until the first semester prerequisite courses are successfully completed. Before starting the third semester, the student must have successfully completed MM 232, Technical Mathematics 2. Upon the successful completion of requirements for this program as listed below, the degree of **Associate in Science in Electrical Technology** will be awarded.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
EE 110	Basic Electricity 1	2	3	3
EE 121	CAD for Automation	3		3
EE 140	Programming for Microcomputers	3		3
MM 132	Technical Math 1	4		4
	Elective: Social Science	3		3
		<hr/> 18	<hr/> 3	<hr/> 19

SEMESTER 2

EE 210	Basic Electricity 2	2	3	3
MM 232	Technical Math 2	4		4
EE 241	Fundamentals of Motor Control	2	3	3
EE 340	Fundamentals of Robotics	2	3	3
IT 320	Hydraulics and Pneumatics	3		3
		<hr/> 13	<hr/> 9	<hr/> 16

SEMESTER 3

EE 320	Ind. Electronics 1	2	3	3
EE 350	Programmable Motor Control	2	3	3
LE 202	Technical Report Writing	3		3
EE 331	Control System Theory 1	4		4
EE 480	Robotics and Automated Systems	2	3	3
		<hr/> 13	<hr/> 9	<hr/> 16

ELECTRICAL/ROBOTICS TECHNOLOGY

SEMESTER 4

EE 440	Solid State Circuit Design	2	2	2
EE 411	Industrial Electronics 2	2	3	3
EE 451	Microprocessor Applications	2	3	3
LE 203	Fundamentals of Speech	3		3
EE 431	Control Systems Theory 2	2	3	3
	Elective: Humanities/Soc. Sci.	3		3
		14	11	17

ELECTRICAL/ROBOTICS TECHNOLOGY

Certificate of Completion program

SEMESTER 1

No.	Course Title	Class	Lab	Credits
EE 110	Basic Electricity 1	2	3	3
EE 121	CAD for Automation	1	2	2
EE 140	Programming for Microcomputers	3		3
LE 100	English Composition 1	3		3
MM 101	Mathematics	1		1
MM 102	Mathematics	1		1
MM 103	Mathematics	1		1
		12	5	14

SEMESTER 2

EE 210	Basic Electricity 2	2	3	3
EE 241	Fundamentals of Motor Control	2	3	3
EE 340	Robotics 1	2	3	3
IT 320	Hydraulics and Pneumatics	3		3
LE 202	Technical Report Writing	3		3
		12	9	15

Upon the successful completion of requirements for this program, a **Certificate of Completion** in **Electrical/Robotics Technology** from STCC will be awarded.

Descriptions of courses offered by this department begin on page 232.

Electronic Systems Engineering Technology

Associate Degree Program

Electronic Systems Engineering Technology is a continually expanding field offering exciting careers in electronic system design, manufacturing, maintenance, marketing, support, and management. Graduates have assumed major roles in a wide variety of professional areas. Some of these areas include communications, control systems, circuit design, system design, systems testing, computer system design, medical systems, and materials testing. As the country designs, upgrades, replaces and maintains the vast communications highway, most of the work will be done by electronics technicians.

Math, computer and technical skills all provide a base for career development that often leads to leadership and management positions in the broad field of electronics engineering.

This program also offers the opportunity to go on for a bachelor's degree. Transfer agreements have been developed and arrangements made with The University of Hartford, Rochester Institute of Technology, and Wentworth Institute of Technology.

Students wishing to continue their education toward a bachelor of science degree in electrical engineering can participate in a 2+1+2 arrangement consisting of two years in the Electronic Systems Engineering Technology program, one year in the Engineering and Science Transfer program, and two years at a four-year college or university. STCC currently participates in articulation agreements with Western New England College, Rensselaer Polytechnic Institute, Worcester Polytechnic Institute, and the University of Massachusetts at Amherst. Students completing this option will receive associate in science degrees sequentially in both Electronic Systems Engineering Technology and Engineering and Science Transfer.

Minimum Grade Requirement: Students in Electronic Systems Engineering Technology must receive a grade of "D" or better. A QPA of 2.0 must be achieved for graduation. Upon the successful completion of the requirements for this program, as listed below, the degree of **Associate in Science in Electronic Systems Engineering Technology** will be awarded.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
ET 111	Intro. to Computer-Aided Engineering Technology	2	3	3
ET 130	Circuit Theory 1	3	3	4
LE 100	English Composition 1	3		3
MM 132	Technical Math 1	4		4
	Elective: Social Science	3		3
		<hr/> 15	<hr/> 6	<hr/> 17

SEMESTER 2

ET 225	Computer Applications	1	3	2
ET 230	Circuit Theory 2	3	3	4
ET 235	Digital Systems	3	3	4
LE 202	Technical Report Writing	3		3
MM 232	Technical Math 2	4		4
		<hr/> 14	<hr/> 9	<hr/> 17

SEMESTER 3

ET 330	Fundamentals of Pulse & Digital Circuits	3		3
ET 342	Computer Systems	3		3
ET 343	Linear Circuits	3	3	4
ET 344	Communications Systems 1	3	3	4
MP 120	Technical Physics for Electronics	3	3	4
		<hr/> 15	<hr/> 9	<hr/> 18

ELECTRONIC SYSTEMS ENGINEERING TECHNOLOGY

SEMESTER 4

ET 442	Linear Systems	3	3	4
ET 443	Microprocessor Architecture	3	3	4
ET 444	Communications Systems 2	3	3	4
LE 203	Fundamentals of Speech	3		3
		<hr/> 12	<hr/> 9	<hr/> 15

MM 132 and MM 232 must be completed and passed by the start of Semester 3.

ELECTRONIC SYSTEMS TECHNOLOGY

Certificate of Completion program

SEMESTER 1

No.	Course Title	Class	Lab	Credits
ET 111	Intro. to Computer-Aided Engineer. Tech.	2	3	3
ET 130	Circuit Theory 1	3	3	4
LE 100	English Composition 1	3		3
MM 132	Technical Mathematics 1	4		4
		<hr/> 12	<hr/> 6	<hr/> 14

SEMESTER 2

ET 225	Computer Applications	1	3	2
ET 230	Circuit Theory 2	3	3	4
ET 235	Digital Systems	3	3	4
MM 232	Technical Mathematics 2	4		4
		<hr/> 11	<hr/> 9	<hr/> 14

Upon the successful completion of the requirements for this program, a **Certificate of Completion** in **Electronic Systems Technology** from STCC will be awarded.

Descriptions of courses offered by this department begin on page 234.

Energy Systems Technology

Associate Degree Program

The Energy Systems Program is unique in the sense that it is the only such program offered on the East Coast. An up-to-date, extensive laboratory facility has been created which utilizes the latest in equipment and control devices. Seniors who complete all course requirements are awarded the Associate in Science degree. They are given the opportunity to earn additional awards by taking the "Certificate of Competency" and "Stationary Fireman's" examinations as directed by the Massachusetts Department of Public Safety. The Energy Systems graduate is well prepared to enter an industry that offers career positions as manufacturers' representatives, service engineers, sales engineers, estimators, independent businessmen, lab technicians, and power plant operators.

Minimum Grade Requirement: Students must achieve a "D" as the minimum passing grade in all HP series technical courses. A student must have earned a minimum QPA of 2.0 for graduation. Upon the successful completion of

ENERGY SYSTEMS TECHNOLOGY

requirements for this program, as listed below, the degree of **Associate in Science in Energy Systems Technology** will be awarded.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MM 132	Technical Math 1	4		4
NP 109	Human Relations	3		3
HP 132	Engr. Graphic 331	1	3	2
HP 110	Theory of Controls	3		3
HP 120	Energy Systems Lab 1	1	3	2
		<hr/> 15	<hr/> 6	<hr/> 17

SEMESTER 2

LE 203	Fundamentals of Speech	3		3
HP 220	Combustion Control Cir.	3		3
HP 230	Energy Systems Lab 2	1	3	2
BD 195	Computer Concepts/Technical	2	2	3
	Elective: Social Science	3		3
		<hr/> 12	<hr/> 5	<hr/> 14

SEMESTER 3

MC 100	College Chemistry	3	3	4
HP 240	Principles of Refrigeration	2	3	3
HP 330	Power Plant Operation 1	3		3
HP 350	Microprocessor Controls	2	3	3
HP 320	Heating System Design	3		3
		<hr/> 13	<hr/> 9	<hr/> 16

SEMESTER 4

LE 202	Tech. Report Writing	3		3
HP 340	Fund. of Air Conditioning	2	2	3
HP 430	Power Plant Operations 2	3		3
HP 425	Building Management Systems	3	3	4
HP 411	Advanced Heating System Design	4		4
		<hr/> 15	<hr/> 5	<hr/> 17

HEATING/VENTILATION/AIR CONDITIONING

Certificate of Completion program

This program prepares individuals for employment in entry-level positions in the heating and air conditioning industry. Fundamentals of oil burner and air conditioning maintenance, repair, and installation are the focus of this program. Students who complete the required course of study are prepared for employment in one of the following occupations: heating systems technician, refrigeration technician, power plant operator, and electrical controls troubleshooter.

ENERGY SYSTEMS TECHNOLOGY

No.	Course Title	Credits
HP 110	Theory of Controls	3
HP 120	Energy Systems Lab 1	2
HP 220	Combustion Control Circuits	3
HP 230	Energy Systems Lab 2	2
HP 240	Principles of Refrigeration	3
HP 330	Power Plant Operation 1	3
HP 340	Fundamentals of Air Conditioning	3
HP 430	Power Plant Operation 2	3
MM 132	Technical Math 1	4
		<hr/> 26

Upon successful completion of the requirements for this program, a **Certificate of Completion in Heating/Ventilation/Air Conditioning** from STCC will be awarded.

Descriptions of courses offered by this department begin on page 238.

Environmental Technology

Associate Degree Program

The Department of Environmental Technology offers courses to prepare students for work in water pollution control, water treatment, air pollution monitoring, occupational safety, hazardous waste, and industrial hygiene. The program is oriented toward environmental control, with the objective of training technicians who can operate water treatment and wastewater treatment facilities; monitor air and water quality; implement health, safety, and hazardous waste regulations; and clean up contaminated groundwater. The graduates will find work in municipal and industrial water pollution control or drinking water facilities, hazardous waste control firms, groundwater hydrology firms, environmental laboratories, environmental regulatory agencies, consulting firms, and health and safety departments in general industry.

The program is career-oriented, and transfer to four-year colleges is possible, although not all credits transfer to every college. It is desirable to have one year of chemistry and one year of algebra prior to entering the program. Those students without this background can expect to take more than two years to complete the program. The students will be trained in both theory and its application, and will receive hands-on laboratory and field experience on pollution control equipment.

Minimum Grade Requirement: The minimum passing grade for any individual course in the Environmental Technology Department shall be a "D" (60). The minimum average for graduation from the department is a "C". Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Environmental Technology** will be awarded .

ENVIRONMENTAL TECHNOLOGY

SEMESTER 1

No.	Course Title	Class	Lab	Credits
HE 210	Municipal Wastewater Plant Operations 1	3		3
LE 100	English Composition 1	3		3
MB 102	Principles of Biology 1	3	2	4
MC 101	Survey of Chemistry 1	3	3	4
MM 132	Technical Math (note 1)	4		4
		<hr/> 16	<hr/> 5	<hr/> 18

SEMESTER 2

BD 195	Computer Concepts/Technical	2	2	3
HE 330	Municipal Wastewater Plant Operations 2	2	3	3
LE 202	Technical Report Writing	3		3
HE 325	Occupational Safety	3		3
MC 201	Survey of Chemistry 2	3	3	4
		<hr/> 13	<hr/> 8	<hr/> 16

SUMMER (5 weeks)

HE 230	Environmental Practicum			3
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SEMESTER 3

HE 315	Facilities Maint. & Instrumentation	3		3
HE 440	Hazardous Materials and Waste Management 1	3		3
MB 122	Environmental Microbiology	3	3	4
HE 321	Fundamentals of Industrial Hygiene	3	3	4
HE 340	Toxicology	3		3
		<hr/> 15	<hr/> 6	<hr/> 17

SEMESTER 4

HE 410	Water and Ind. Wastewater Treatment	2	3	3
HE 435	Safety Risk Management	3		3
HE 441	Hazardous Materials and Waste Management 2	2	3	3
MC 340	Instrumental Analysis	2	3	3
	Elective: Social Science	3		3
		<hr/> 12	<hr/> 9	<hr/> 15

NOTE:

- (1) Auto-tutorial math MM 101, MM 102, MM 103 may be taken in place of MM 132.

ENVIRONMENTAL TECHNOLOGY

OCCUPATIONAL HEALTH AND SAFETY FOR REGISTERED NURSES

Certificate of Completion program

SEMESTER 1

No.	Course Title	Class	Lab	Credits
HE 321	Fundamentals of Industrial Hygiene	3	3	4
HE 340	Toxicology	3		3
	Elective: English (note 1)	3		3
		<hr/> 9	<hr/> 3	<hr/> 10

SEMESTER 2

HE 325	Occupational Safety	3		3
HE 435	Safety Risk Management	3		3
HE 441	Hazardous Materials and Waste Management	2	3	3
	Elective: Social Science (note 2)	3		3
		<hr/> 11	<hr/> 3	<hr/> 12

Notes:

- (1) Communications course: LE 100 English Composition 1, LE 202 Technical Report Writing, LE 203 Fundamentals of Speech, or another relevant English course
- (2) Restricted to psychology electives

Upon the successful completion of the requirements for this program, a **Certificate of Completion** in **Occupational Health and Safety for Registered Nurses** from STCC will be awarded.

ENVIRONMENTAL TECHNOLOGY

Certificate of Completion program

SEMESTER 1

No.	Course Title	Class	Lab	Credits
HE 210	Municipal Wastewater Plant Operations 1	3		3
HE 315	Facilities Maintenance & Instrumentation	3		3
LE 100	English Composition 1	3		3
MC 101	Survey of Chemistry 1	3	3	4
MM 101	Mathematics	1		1
MM 102	Mathematics	1		1
MM 103	Mathematics	1		1
		<hr/> 15	<hr/> 3	<hr/> 16

SEMESTER 2

HE 325	Occupational Safety	3		3
HE 330	Municipal Wastewater Plant Operations 2	2	3	3
HE 410	Water and Industrial Wastewater Treatment	2	3	3
MC 201	Survey of Chemistry 2	3	3	4
		<hr/> 10	<hr/> 9	<hr/> 13

Upon the successful completion of the requirements for this program, a **Certificate of Completion** in **Environmental Technology** from STCC will be awarded.

Descriptions of courses offered by this department begin on page 249.

Graphic Arts Technology

Associate Degree Program

The Graphic Arts Department offers a curriculum designed to prepare students for the many and varied careers available in the commercial printing and advertising business. The courses are devoted to functional discussions crossing most branches of the printing industry. It is the objective of the department to relate the many branches of the industry to each other and to the totality of contemporary printing. Rochester Institute of Technology, as well as other institutions offering Graphic Arts specialty courses, have indicated that they will accept credits from this program toward an advanced degree in Printing and Publishing.

The program offers two options wherein the student may concentrate in two major areas within the printing industry. Options in Commercial Art or Printing Technology allow the student to specialize in that area where his or her talents are most satisfied. A certificate program is also offered in both options.

Minimum Grade Requirement: The minimum passing grade for any individual course in this program shall be a "D" (60%). The minimum average for graduation from the program is a "C" (73%).

Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Graphic Arts Technology** will be awarded.

CORE CURRICULUM FOR BOTH OPTIONS

SEMESTER 1

No.	Course Title	Class	Lab	Credits
GA 120	Typography	2	3	3
GA 131	Printing Technology	3		3
GA 145	Intro. to the Graphic Arts Computer	2	6	3
LE 100	English Composition 1	3		3
	Elective: social science	3		3
		<hr/> 13	<hr/> 9	<hr/> 15

SEMESTER 2

BD 301	Microcomputer Applications for Windows	3		3
GA 211	Basic Image Assembly	1	3	2
GA 220	Layout	2	3	3
GA 241	Desktop Publishing Typography	1	3	2
MM 120	Contemporary Math *	3		3
	Elective: English (Note 1)	3		3
		<hr/> 13	<hr/> 9	<hr/> 16

*Higher level math acceptable (recommended for transfer)

GA 398 and GA 497 Co-op: Recommended additional courses but not certified as a substitution for any of the above.

Note 1: LE 202 Technical Report Writing or LE 200 English Composition 2

GRAPHIC ARTS TECHNOLOGY

COMMERCIAL ART

(OPTION TO GRAPHIC ARTS TECHNOLOGY)

This option prepares the student for copy preparation departments of commercial printing or entry level into advertising agencies and commercial art studios. Developed proficiency in typography, typesetting, layout, design, and mechanical preparation provide the basic skills required for this exciting and demanding career.

SEMESTER 3

BI 312	Advertising Principles	3		3
GA 350	Graphic Design	2	3	3
GA 360	Offset Presswork	2	3	3
GA 371	Printshop Management	3		3
GA 455	Macintosh Operating Systems	3		3
MP 255	Photographic Science	2	3	3
		15	9	18

SEMESTER 4

GA 321	Advanced Image Assembly	1	3	2
GA 442	Prepress Imaging	2	3	3
GA 445	Computerized Graphic Design	2	3	3
GA 461	Advanced Desktop Publishing	2	3	3
LA 360	Experimental Computer Imaging 1	3	2	4
		10	14	15

GA 398 and GA 497, Cooperative Education: Recommended as additional courses, but not certified as substitution for any of the above.

PRINTING TECHNOLOGY

(OPTION TO GRAPHIC ARTS TECHNOLOGY)

This option to Graphic Arts Technology combines the graphic arts technical aspects with basic managerial skills, providing the student with the expertise for entry-level placement in middle management positions in the commercial or in-plant printing industry. Also included is a concentrated study in the technical aspects of the printing industry, which prepares students for entry into the commercial printing field as a technician in one of the many areas requiring a high degree of proficiency in copy preparation, color stripping procedures, and copy reproduction.

SEMESTER 3

GA 360	Offset Presswork	2	3	3
GA 371	Printshop Management	3		3
GA 380	Chemistry of Lithography 1	3		3
GA 461	Advanced Desktop Publishing	2	3	3
MP 255	Photographic Science	2	3	3
		12	9	15

SEMESTER 4

GA 321	Advanced Image Assembly	1	3	2
GA 411	Chemistry of Lithography 2	2	3	3
GA 420	Color Reproduction Processes	2	3	3
GA 442	Prepress Imaging	2	3	3
GA 455	Macintosh Operating Systems	3		3
	Elective: humanities	3		3
		<hr/> 13	<hr/> 12	<hr/> 17

GA 398 and GA 497, Cooperative Education: Recommended as additional courses but not certified as a substitution for any of the above.

GA 397 and GA 497, GA Co-op will be allowed as a professional elective if an appropriate work experience of a minimum 12 hours per week is available to the student and is approved by the GA Co-op advisor.

GRAPHIC ARTS TECHNOLOGY

(Certificate of Completion program)

SEMESTER 1

No.	Course Title	Class	Lab	Credits
GA 120	Typography	2	3	3
GA 131	Printing Technology	3		3
GA 135	Intro. to the Graphic Arts Computer	2	3	3
LE 100	English Composition 1	3		3
		<hr/> 10	<hr/> 6	<hr/> 12

SEMESTER 2

GA 210	Basic Image Assembly	2	3	3
GA 220	Layout	2	3	3
GA 240	Desktop Publishing Typography	2	3	3
GA 360	Offset Presswork	2	3	3
	Elective: Mathematics	3		3
		<hr/> 11	<hr/> 12	<hr/> 15

Upon the successful completion of the requirements for this program, a **Certificate of Completion** in **Graphic Arts Technology** from STCC will be awarded.

Descriptions of courses offered by this department begin on page 254.

Landscape Design and Management Technology

Associate Degree Program

Students enrolled in this program will receive a broad base in the development and maintenance of land areas. Topics ranging from plant identification and use, and tree and landscape maintenance, to landscape design and construction, are included as part of the curriculum. The importance of qualified field personnel is stressed throughout the program. Students will be given an appreciation and

LANDSCAPE DESIGN AND MANAGEMENT TECHNOLOGY

understanding of the effects that can be created by well-planned landscape design and maintenance. Graduates may be employed by nurseries, landscape contractors, private and public parks, and by business firms as grounds maintenance specialists. With the rapid development of more complex and varied materials and equipment for use in this field, there is an increasing need for properly trained personnel to fill responsible positions both in field work and in planning and management.

Minimum Grade Requirement: All Landscape Technology courses shall be completed with a grade of "D" (63% or 1.0) or above. Any course failed must be repeated before graduation and each course may be repeated only once. The student must also have achieved a 2.0 QPA and shall have remained in good academic standing as outlined in general college policy.

Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Landscape Design and Management Technology** will be awarded.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
BD 195	Computer Concepts for Technologies	2	2	3
LE 100	English Composition 1	3		3
MM 122	Applied Mathematics 1	3		3
GL 111	Trees in Landscape	3	3	4
GL 120	Prin. of Horticulture	2	3	3
		<hr/> 13	<hr/> 8	<hr/> 16

SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
GL 210	Presentation Techniques		6	3
MB 108	General Botany	3	3	4
GL 220	Turf Management	2	3	3
	Elective: Social Science	3		3
		<hr/> 11	<hr/> 12	<hr/> 16

SEMESTER 3

GL 311	Shrubs in the Landscape	3	3	4
GL 320	Landscape Practices	2	3	3
GL 330	Landscape Design 1	1	4	3
GL 350	Landscape Oper. (Plant)	2	3	3
LE 203	Fundamentals of Speech	3		3
	Elective: Social Sciences *	3		3
		<hr/> 14	<hr/> 13	<hr/> 19

SEMESTER 4

GL 410	Plant Propagation	2	3	3
GL 420	Landscape Design 2	1	4	3
GL 431	Earth Forms & Structures	3	3	4
BK 421	Small Business Formation	3		3
GL 450	Entomology/Disease Control	2	3	3
		<hr/> 11	<hr/> 13	<hr/> 16

* NP 109 recommended

LANDSCAPE DESIGN AND MANAGEMENT**(Certificate of Completion program)****SEMESTER 1**

No.	Course Title	Class	Lab	Credits
GL 111	Trees in the Landscape	3	3	4
GL 120	Principles of Horticulture	2	3	3
GL 320	Landscape Practices	2	3	3
LE 100	English Composition 1	3		3
		<hr/> 10	<hr/> 9	<hr/> 13

SEMESTER 2

BK 421	Small Business Formation	3		3
GL 210	Presentation Techniques		6	3
GL 220	Turf Management	2	3	3
GL 410	Plant Propagation	2	3	3
GL 450	Entomology/Disease Control	2	3	3
		<hr/> 9	<hr/> 15	<hr/> 15

Upon the successful completion of the requirements for this program, a **Certificate of Completion** in **Landscape Design and Management** from STCC will be awarded.

Descriptions of courses offered by this department begin on page 262.

Laser Electro-Optics Technology

Associate Degree Program

Laser Electro-Optics Technology is one of the more rapidly growing technical fields in America today. The trained technician can expect favorable job opportunities, promotion potential and rapid advancement. STCC's program is designed to expose the student to four major areas: Laser Systems, Electronics, Optics and Electro-Optics. The student will learn about the laser both as an instrument and as an integral part of a system designed for industrial, medical and scientific application. The electronics used in generating and controlling the laser will be taught. The use of the laser in electronics production, testing, maintenance, research and development, is part of the curriculum. In the field of optics, the student will acquire a good working knowledge of light, geometrical and physical optics, optical components and optical systems. Finally, the student will devote a large portion of his time to incorporating optical and laser skills and knowledge into developing Electro-Optical Techniques and Systems.

Students wishing to continue their education toward a bachelor of science program in electrical engineering can participate in a 2+1+2 arrangement consisting of two years in the Laser Electro-Optics Technology program, one year in the Engineering and Science Transfer program, and two years at a four-year college or university. STCC currently participates in articulation agreements with Western New England College, Rensselaer Polytechnic Institute, Worcester Polytechnic Institute, and the University of Massachusetts at Amherst. Students completing this option will receive the associate of science degree sequentially in both Laser Electro-Optics Technology and Engineering and Science Transfer.

LASER ELECTRO-OPTICS TECHNOLOGY

Minimum Grade Requirement: Students must receive a grade of "D" or better. A QPA of 2.0 must be achieved for graduation.

Upon the successful completion of requirements for this program, as listed below, the **Associate in Science Degree in Laser Electro-Optics Technology** will be awarded.

CORE CURRICULUM FOR ALL OPTIONS

SEMESTER 1

No.	Course Title	Class	Lab	Credits
ET 111	Intro. to Computer-Aided Engin. Tech.	2	3	3
ET 130	Circuit Theory 1	3	3	4
LE 100	English Composition 1	3		3
MM 132	Technical Math 1	4		4
	Elective: Social Science	3		3
		<hr/> 15	<hr/> 6	<hr/> 17

SEMESTER 2

EL 090	Laser Safety	1		1
EL 330	Geometrical Optics	3	3	4
ET 225	Computer Applications	1	3	2
ET 230	Circuit Theory 2	3	3	4
ET 235	Digital Systems	3	3	4
MM 232	Technical Math 2	4		4
		<hr/> 15	<hr/> 12	<hr/> 19

LASER APPLICATIONS

(OPTION TO LASER ELECTRO-OPTICS TECHNOLOGY)

SEMESTER 3

EL 320	Introduction to Lasers	3	3	4
EL 325	Laser Electronics	3	3	4
EL 335	Data Acquisition & Control	3		3
EL 420	Wave Optics	3	3	4
MP 120	Technical Physics for Electronics (or)			
MC 103	General Chemistry 1	3	3	4
		<hr/> 15	<hr/> 12	<hr/> 19

SEMESTER 4

EL 412	Laser Electro-Optics Projects	2	3	3
EL 415	Laser Systems	3	3	4
EL 425	Industrial Laser Applications	3	3	4
LE 202	Technical Report Writing	3		3
		<hr/> 11	<hr/> 9	<hr/> 14

PHOTONICS**(OPTION TO LASER ELECTRO-OPTICS TECHNOLOGY)****Planned Implementation Fall, 1996****SEMESTER 3**

EL 320	Introduction to Lasers	3	3	4
EL 345	Photonics	3	3	4
EL 348	Optical Communications	3		3
EL 420	Wave Optics	3	3	4
MP 120	Technical Physics for Elect. (or)			
MC 103	General Chemistry 1	3	3	4
		<hr/> 15	<hr/> 12	<hr/> 19

SEMESTER 4

EL 412	Laser Electro-Optics Projects	2	3	3
EL 435	Fiber/Integrated Optics	3	3	4
EL 438	Optoelectronics	3	3	4
LE 202	Technical Report Writing	3		3
		<hr/> 11	<hr/> 9	<hr/> 14

OPTICAL FABRICATION AND TESTING**(OPTION TO LASER ELECTRO-OPTICS TECHNOLOGY)****Planned implementation Fall, 1996****SEMESTER 3**

EL 320	Introduction to Lasers	3	3	4
EL 350	Optical System Design	3		3
EL 352	Optical Test and Measurement	3	3	4
EL 420	Wave Optics	3	3	4
MP 120	Technical Physics for Elec. (or)			
MC 103	General Chemistry 1	3	3	4
		<hr/> 15	<hr/> 12	<hr/> 19

SEMESTER 4

EL 412	Laser Electro-Optics Projects	2	3	3
EL 440	Vacuum Thin Film Deposition	3	3	4
EL 442	Optical Component Fabric & Assem.	3	3	4
LE 202	Technical Report Writing	3		3
		<hr/> 11	<hr/> 9	<hr/> 14

Descriptions of courses offered by this department begin on page 264.

Mechanical Engineering Technology

Associate Degree Program

Mechanical Engineering Technology is concerned with the design, improvement, and installation of an integrated system of people, materials, and equipment in order to produce new and better products for society. It draws upon specialized

MECHANICAL ENGINEERING TECHNOLOGY

knowledge and skills in mathematics and computer science. Men and women in the STCC program receive intensive instruction in the principles and methods of engineering analysis, and acquire a working knowledge of the complete manufacturing environment, including tools, processes, materials and engineering documentation.

The two-year associate degree program at STCC offers two options:

1. CAD/CAM (Computer-Aided Design and Computer-Aided Manufacturing)
2. CIM (Computer Integrated Manufacturing)

Upon successful completion of the requirements for the program options described below, the degree of **Associate in Science in Mechanical Engineering Technology** will be awarded.

CORE CURRICULUM FOR BOTH OPTIONS

SEMESTER 1

No.	Course Title	Class	Lab	Credits
FA 112	Machine Tool Techniques 1	1	6	3
FB 135	Mechanical Drawing	2	3	3
FB 225	Intro. to CIM	3		3
LE 100	English Composition 1	3		3
MM 132	Technical Math 1	4		4
		13	9	16

COMPUTER-AIDED DESIGN/COMPUTER-AIDED MANUFACTURING (OPTION TO MECHANICAL ENGINEERING TECHNOLOGY)

This program prepares the student to take on positions such as detailers or designers using CAD systems or as engineering assistants working with professional mechanical engineers. As industries move toward blueprintless companies, CAD designers will also require a knowledge of CAM to ensure compatible data transfer. As a result, a graduate of the CAD/CAM option is poised to enter a small company where he/she could be both the designer and manufacturer.

This program develops the necessary background in mathematics, mechanics and strength of materials, engineering analysis, and computer applications.

A background in high school algebra is required.

SEMESTER 2

No.	Course Title	Class	Lab	Credits
FB 110	Production Processes	3		3
FB 224	Geometric Dimensioning and Tolerancing	2	3	3
FB 230	CAD Level 1	2	4	3
LE 202	Technical Report Writing	3		3
MM 232	Technical Math 2	4		4
	Elective: Humanities	3		3
		17	7	19

SEMESTER 3

FA 335	CAM 1	2	6	4
FB 221	Mechanics	3		3
FB 336	CAD Level 2	2	6	4
FB 420	Fluid Mechanics	3		3
	Elective: Social Sciences	3		3
		<hr/> 13	<hr/> 12	<hr/> 17

SEMESTER 4

FB 321	Strength of Materials	3		3
FA 435	CAM 2	2	6	4
FB 435	CAD Level 3	2	3	3
FB 465	Advanced CAD Applications	1	3	2
MP 119	Technical Physics	3	3	4
		<hr/> 11	<hr/> 15	<hr/> 16

COMPUTER-INTEGRATED MANUFACTURING

(OPTION TO MECHANICAL ENGINEERING TECHNOLOGY)

This program is designed to prepare the student to enter a modern manufacturing facility that integrates design, production, cost control, and quality assurance through computer automation. The emphasis of this curriculum is to prepare graduates for employment as engineering assistants to manufacturing engineers. As a consequence, the curriculum focuses on manufacturing-related courses such as statistical process control, computer-aided cost estimated, and automated manufacturing systems.

A background in high school algebra is required.

SEMESTER 2

No.	Course Title	Class	Lab	Credits
FA 211	Machine Tool Techniques 2	1	6	3
FA 235	CNC Programming	2	3	3
FB 110	Production Processes	3		3
FB 230	CAD Level 1	2	4	3
LE 202	Technical Report Writing	3		3
MM 232	Technical Math 2	4		4
		<hr/> 15	<hr/> 13	<hr/> 19

SEMESTER 3

FA 335	CAM 1	2	6	4
FB 331	Statistical Process Control	2	3	3
FB 430	Engineering Economy (Costimator)	2	3	3
FB 443	CIM Applications	2	3	3
	Elective: Social Science	3		3
		<hr/> 11	<hr/> 15	<hr/> 16

MECHANICAL ENGINEERING TECHNOLOGY

SEMESTER 4

FA 435	CAM 2	2	6	4
FB 418	Automated Systems Lab	2	3	3
FB 442	Manufacturing: Planning and Control	2	3	3
MP 119	Technical Physics	3	3	4
	Elective: Humanities	3		3
		<hr/> 12	<hr/> 15	<hr/> 17

COMPUTER-AIDED DRAFTING

Certificate of Completion program

This program prepares the student for an entry-level position as a design detailer using AutoCAD or similar drafting software. Students gain skills in 3D design and geometric dimensioning. Students who complete the required course of study in CAD are prepared for employment as a computer-aided drafting/designer, mechanical detailer, 3D designer, or drafting quality assurance examiner.

No.	Course Title	Credits
FB 135	Mechanical Drawing	3
FB 224	Geometric Dimensioning and Tolerancing	3
FB 230	CAD Level 1	3
FB 336	CAD Level 2	4
FB 435	CAD Level 3	3
FB 465	Advanced CAD Applications	2
LE 100	English Composition 1	3
MM 132	Technical Math 1	4
		<hr/> 25

Upon successful completion of the requirements for this program, a **Certificate of Completion** in **Computer-Aided Drafting** from STCC will be awarded.

COMPUTER-AIDED MANUFACTURING

Certificate of Completion program

This program prepares the student for an entry-level position as a part programmer using SmartCAM or similar CNC programming software. The student will be capable of taking a part print, determine the appropriate method for manufacturing, program the part, set up, and run CNC machinery. Students who complete the required course of study in CAM will be prepared for employment as a computer-numeric controlled (CNC) programmer, 3D machining and modeling technician, CNC machine operator, or software integration technician.

No.	Course Title	Credits
FA 235	CNC Programming	3
FA 335	Computer-Aided Manufacturing 1	4
FA 435	CAM 2	4
FB 135	Mechanical Drawing	3
FB 230	CAD Level 1	3
FB 336	CAD Level 2	4
LE 100	English Composition 1	3
MM 132	Technical Math 1	4
		<hr/> 28

Upon successful completion of the requirements for this program, a **Certificate of Completion in Computer-Aided Manufacturing** from STCC will be awarded.

COMPUTER-INTEGRATED MANUFACTURING

Certificate of Completion program

This program prepares the student for an entry-level position in state-of-the-art manufacturing companies using computer integration. Graduates are prepared to assume positions in MRP, routing, parts procurement, WIP, inventory control, and more. Although this program features a manufacturing discipline, graduates are able to seek employment in virtually any company which uses computer integration in its day-to-day operations. Students who complete the required course of study in CIM are prepared for employment as a manufacturing quality assurance examiner, production control specialist, software integration technician, or automated materials handling operator.

No.	Course Title	Credits
BD 101	Computer Concepts	4
FB 110	Manufacturing Processes	3
FB 225	Introduction to CIM	3
FB 331	Statistical Process Control	3
FB 418	Automated Systems Lab	3
FB 442	Manufacturing Planning and Control	3
FB 443	CIM Applications	3
LE 100	English Composition 1	3
MM 132	Technical Math 1	4
		<hr/> 29

Upon successful completion of the requirements for this program, a **Certificate of Completion in Computer-Integrated Manufacturing** from STCC will be awarded.

Descriptions of courses offered by this department begin on page 275.

Telecommunications Technology

Associate Degree Program

This program is designed to give students a solid preparation in the skills and processes involved in writing and producing video for broadcast, cable, industrial and medical uses.

A working knowledge of the operation and capabilities of professional video equipment is developed through extensive practice. Insights into the nature of moving-image media are gained through classroom demonstration and discussion.

The majority of students completing the Telecommunications program transfer to four-year colleges; however, others have moved directly into entry-level jobs in the industry.

Minimum Grade Requirement: The average of all courses taken in the Telecommunications major must be 2.0 (C) or above. Upon successful completion of the requirements for this program as listed below, the degree of **Associate in Science in Telecommunications Technology** will be awarded.

TELECOMMUNICATIONS TECHNOLOGY

SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
GT 111	Introduction to TV Writing	4		4
GT 120	Video Techniques	2	3	3
GT 130	Video Production	2	3	3
GT 140	Intro. to Mass Communication	3		3
		<hr/> 14	<hr/> 6	<hr/> 16

SEMESTER 2

GT 210	Advanced TV Writing	3		3
GT 220	TV Prod. & Directing	2	3	3
GT 230	Speaking on TV	3		3
GT 240	Mass Media Theory and Effects	3		3
NS 100	Introduction to Sociology	3		3
BD 300	Microcomputer Applications	3		3
		<hr/> 17	<hr/> 3	<hr/> 18

SEMESTER 3

GT 322	TV Journalism	3		3
GT 331	TV Production Practicum (or elective)		6	2
GT 310	Informational Video Design	2	3	3
NP 100	General Psychology	3		3
LE 200	English Composition 2	3		3
	Elective: Humanities/Soc. Sci.	3		3
		<hr/> 14	<hr/> 9	<hr/> 17

SEMESTER 4

GT 411	Informational Video Production	2	3	3
GT422	TV News Production	1	6	3
GT 431	TV Production Practicum 2 (or elective)		6	2
GT440	Electronic Media Systems	3		3
MP 125	Physical Science	3	3	4
		<hr/> 9	<hr/> 18	<hr/> 15

Descriptions of courses offered by this department begin on page 311.

Health



Health

All students entering Health/Human Services programs or the Nursing program must take the College math, English, and reading placement tests. Students in the following programs must place at the level of MM 093 or better: Clinical Laboratory Science, Dental Hygiene, Nuclear Medicine Technology, Physical Therapist Assistant, Radiation Therapy Technology, Radiography, Respiratory Care, and Surgical Technology.

Clinical rotations are an integral part of all Health/Human Services departments and Nursing Division program curricula. The clinical component is based upon contracts negotiated with area health care facilities, physicians, dentists and educational facilities.

Final acceptance into the Health/Human Services/Division or Nursing Division is conditional upon the submission of all health forms to the College Health Service and review and acceptance of students by both the Dean of Health/Human Services or Dean of Nursing and the affiliation agency representative.

Students enrolled in Health/Human Services Division and the Nursing Division, in addition to meeting the general requirements of the College must:

1. Meet the terms of the clinical affiliation agreement with the cooperating agencies.
2. Meet the technical standard of the profession (see page 16)
3. Meet the specific academic requirements of their program of study.

The terms of the affiliation agreements require each student to:

1. Submit a pre-entrance physical examination and record of immunization completed by a licensed physician to the College Health Service for review by the affiliating agency and the College.

ALL REQUIRED LABORATORY WORK, IMMUNIZATIONS, AND CHEST X-RAYS IN ADDITION TO THE PHYSICAL EXAMINATION MUST BE COMPLETED PRIOR TO THE FIRST DAY OF CLASSES IN THE FIRST SEMESTER. A REPEAT MANTOUX MUST BE DONE BEFORE THE BEGINNING OF THE THIRD SEMESTER. (see Immunization Law, page 16)

All students must be immunized for Hepatitis B or have on file in the College Health Services office a statement of declination.

The affiliating agency reserves the right to **refuse** to accept a student for placement who does not meet the Agency standards or who has not been immunized.

2. Carry a malpractice liability insurance policy. The College will arrange for this insurance coverage. The premium is to be paid by the insured student. Limits of coverage are to be determined by the College. At the present time, cost to the student is about \$15.00 per year, except for Radiation Therapy students, for whom the cost is \$150. This rate is subject to change.
3. The College requires that all students in the Health/Human Services Divisions must wear the college student uniform as set forth by the departments and meet the requirements of the *Professional Dress Code* when on affiliation in clinical laboratory settings and at other times as designated by the respective departments.
4. Abide by the rules and regulations of the cooperating agencies.

5. Assume the cost of transportation to the clinical agencies and other related expenses such as meals, etc.
6. Fulfill the academic and professional requirements of the department enrolled in as well as those of the College.

The specific academic requirements of the Health/Human Service departments are set forth on the specific page dedicated to the program within this publication.

The College reserves the right to withdraw any student at any time from his/her program in Health/Human Services or Nursing who cannot be placed in a cooperating agency because of failure of the student to meet or comply with the terms of the affiliation agreement, and/or achieve the behavioral objectives/competencies of the educative event(s).

Many of the health profession's accrediting agencies have specific requirements both in theory and practice which must be met by the program of study in order to be accredited. Therefore, some curricula, in order to meet the hour requirements of their accrediting agency, have intersession and/or summer sessions in addition to the regular college semester. Students will *be charged for intersession and/or summer sessions at the regular Division of Continuing Education rate*. This is in addition to the regular college tuition which covers the semester course of study.

The clinical laboratories are scheduled according to available agency time and the needs of the program. Therefore, students may be scheduled on evenings and/or weekends by arrangement. You will be given notice in advance of such scheduling.

Clinical Laboratory Science

Associate Degree Program

This program offers an integrated curriculum which provides the students with a background in general education and the skills necessary to function in a clinical laboratory science field and prepares them at career entry level. Fundamentals in clinical waste management, OSHA regulations, clinical microscopy, urinalysis, microbiology, hematology, immunohematology and clinical chemistry comprise the core curriculum. Clinical experience is obtained in a hospital laboratory with which the College has a contractual agreement. The clinical experience may not be sequential, but by arrangements, according to available clinical resources. In order to matriculate, students must:

- 1.) Have achieved a minimum passing grade of "C" (75) in all clinical laboratory courses (departmental) and
- 2.) Have passed all courses within the given semester. A minimum QPA of 2.0 must be maintained to remain within the department. Failed CLS department courses and a QPA of less than 2.0 require that a student must reapply to the department. This may be done only once.
- 3.) All health requirements of the College, the Health/Human Services Division and the CLS Department must be satisfied.

Applicants must have completed a college preparatory course in high school which included biology, chemistry, and mathematics. SAT scores must be 400 or greater in mathematics and verbal skills with a total score of 800 or higher. Graduates of the program are eligible for national certification by successfully passing a computerized adaptive examination given by a certifying agency.

CLINICAL LABORATORY SCIENCE

Clinical laboratory practicum includes an intersession spring and summer session which may not be sequential to the academic program, depending on availability of placement. This practicum starts during the intersession period in the second year of study. Students must be mindful that placement will require travel and that they are responsible for their own transportation and maintenance. Students are charged tuition for the Summer Session at the regular Division of Continuing Education rate. This program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences. This program is open for admission every other year. The next class will be accepted for September 1996. Upon successful completion of the program requirements as listed below, the degree of **Associate in Science in Clinical Laboratory Science** will be awarded.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MC 101	Survey of Chemistry 1	3	3	4
MB 133	Anatomy and Physiology	3	3	4
AL 101	Intro. to Clinical Lab	3	2	4
AL 103	Medical Laboratory Safety	1		1
BD 192	Computer Concepts for Allied Health	1	2	2
		14	10	18

SEMESTER 2

LE 200	English Comp. 2: Intro. to Literature	3		3
MC 201	Survey of Chemistry 2	3	3	4
MM 142	Statistics 1	3		3
MB 140	Biochemistry	3		3
AL 211	Medical Microbiology 1	3	3	4
BB 311	Basic Legal Concepts	1		1
		16	6	18

SEMESTER 3

AL 300	Hematology and Coagulation	3	3	4
AL 302	Clinical Chemistry	3	3	4
AL 311	Medical Microbiology 2	2	3	3
MC 355	Instrumentation for CLS	1	2	2
AA 111	Human Sexuality (Note 1)	1		1
AA 112	Living and Dying (Note 1)	1		1
		11	11	15

INTERSESSION (2 Weeks)

AL 420	Clinical Practicum 1		40	1
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SEMESTER 4

AL 410	Clinical Immunology/Immunohematology	3	3	4
AL 421	Clinical Practicum 2		32	6
		3	35	10

SUMMER

AL 422	Clinical Practicum 3		40	3
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Note 1: A social science elective may be substituted.

Descriptions of courses offered by this department begin on page 208.

Cosmetology

Certificate Program

The Cosmetology program is designed to provide the student with the basics of the art, science, and business aspects of the cosmetology profession. Students receive valuable experience practicing their skills at the STCC patron lab.

The course of study is a two-semester program, beginning in the fall and ending in the spring. The one-year certificate program follows the guidelines outlined by the Division of Registration, Massachusetts Board of Cosmetology. After meeting the hour and course requirements, the student will receive a Certificate of Cosmetology and an application for the Massachusetts Licensure Examination. After passing the examination, the student will receive a Massachusetts Operator's License. After two years of employment, the graduate may apply for licensure as a Cosmetologist with the Massachusetts Board of Registration in Cosmetology.

The student may continue on to the third and fourth semester and qualify to receive the Associate in Science degree in Cosmetology Management. This progression may be done immediately, or be postponed until a later date. It should be noted that the graduate of the certificate program may be working as a Cosmetology Operator while s/he is in the third and fourth semester of study completing the requirements for the Associate in Science degree.

Eligibility: A student must be a high school graduate, sixteen (16) years of age or older, with a satisfactory medical report. The student must have high school English grades of "C" or better.

Minimum Grade Requirement: A student must maintain a minimum grade of "C" (73%) in each cosmetology course in order to qualify for graduation.

Attendance Requirement: Attendance is compulsory because of the minimum hour requirement for graduation. The College **does not** provide for make up time due to absenteeism. If a student fails to meet the attendance requirement, s/he may be dropped from the program within the first two semesters.

Course Prerequisites: If a student fails any of the required Cosmetology courses, he/she may re-apply for the following semester that the courses are offered. Application for licensure will not be given until the hour and course requirements are met. In this case, the Massachusetts Board of Cosmetology will be notified.

Cosmetology students must purchase assigned books, uniforms and kits for the start of class. The kit is comprised of essential equipment and supplies needed to practice the skills.

Upon successful completion of the requirements for this program, a **Certificate in Cosmetology** and application to apply for the licensure examination will be provided.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
AC 112	The Professional Cosmetologist	2		2
AC 113	Cosmetology 1	2	24	8
AC 115	Aesthetics 1	1	3	2
MB 146	Essentials of Human Biology 1	2	2	3
		<hr/> 7	<hr/> 29	<hr/> 15

COSMETOLOGY

SEMESTER 2

AC 213	Cosmetology 2	2	24	8
AC 214	Aesthetics 2	1	2	2
AC 215	Cosmetology 3	3		3
MB 246	Essentials of Human Biology 2	2	2	3
		8	28	16

Descriptions of courses offered by this department begin on page 217.

Cosmetology Management

2nd Year Option for Licensed Cosmetologists

Licensed cosmetologists who have qualified for their licensure status by completing the educational process for a cosmetology operator at an institution other than Springfield Technical Community College may apply for the Associate in Science in Cosmetology Management degree for Licensed Cosmetologists. This curriculum is composed of two parts: 1) thirty-two (32) credits earned by challenge examinations, and 2) two (2) semesters of academic study. The academic study may be completed on a full- or part-time basis.

Admission Requirements: The applicant to this program must be a high school graduate or the equivalent. S/he must hold a current license within the Commonwealth as an operator or a licensed Cosmetologist. License requirements in other states will be evaluated on an individual basis.

Admission Process: The applicant may file an application to take the Cosmetology challenge examinations (1 and 2) in the STCC Testing and Assessment Center. These exams may be taken separately or together. The examinations are offered several times during the academic year. For specific times, contact the College's Testing Coordinator at 781-7822, extension 3374. Study guides will be available on registration.

When the applicant has successfully passed the two (2) challenge examinations with a grade of 73% or better on each of the examinations, s/he may apply to the Admissions Office of STCC for admission into the Associate in Science in Cosmetology Management program of study, on either a full- or part-time basis.

In addition to the 32 credits earned on the challenge examinations, a minimum of 15 of the required 30 credits must be earned at STCC to fulfill the residency requirements of the College.

Upon the successful completion of the requirements for this program, the degree of **Associate in Science in Cosmetology Management** will be awarded.

SEMESTER 3

LE 100	English Composition 1	3	3
NP 109	Human Relations	3	3
	Elective: Business	3	3
BD 300	Microcomputer Applications	3	3
BK 110	Principles of Management	3	3
		15	15

SEMESTER 4

LE 203	Fundamentals of Speech	3	3
NS 100	Introduction to Sociology	3	3
LE 201	Business English	3	3
	Elective: Business	3	3
	Elective: Social Science	3	3
		<hr/> 15	<hr/> 15

Dental Assistant

Certificate Program

The Dental Assistant curriculum encompasses the multi-disciplinary team concept. Theoretical skills are attained in conjunction with supervised off-campus clinical affiliation experiences. The curriculum conforms to the standards which are required by the Commission on Accreditation of Dental and Dental Auxiliary Educational Programs. Upon successful completion of the program, the student graduates with a Certificate in Dental Assistant and is eligible to take the Dental Assistant National Board Examination.

The program in dental assisting is fully accredited by the Commission on Dental Accreditation of the American Dental Association, a specialized accrediting body recognized by the Council on Postsecondary Accreditation and by the United States Department of Education.

An applicant should be a high school graduate, or possess a G.E.D. equivalency with a college preparatory background in English, biology (with a lab), mathematics, and typing. The Scholastic Aptitude Test (SAT) is optional, but preferred. Applications should be submitted to the Admissions Office.

The Dental Assistant program has two primary objectives: to prepare the student for employment as a professional member of the dental team, functioning as a competent dental assistant after graduation; and to prepare and motivate the student to continue his/her dental education by obtaining a degree in dental hygiene, or a baccalaureate degree. Advanced degrees will enable the qualified student to participate in broader areas of the dental profession.

Dental assisting students must purchase a kit which is comprised of essential materials and supplies. In addition, other expenses will be required as the academic year progresses. Information will be provided on acceptance.

Clinical affiliation is conducted off-campus at various dental offices throughout Western Massachusetts. The student is responsible for providing transportation to and from each clinical and educational facility. The student is expected to be in full dress uniform during this portion of the curriculum.

The minimum grade requirement for the Dental Assistant Program is a grade of "C" (2.0) in each course. Upon the successful completion of requirements for this program, as listed below, a **Certificate in Dental Assistant** will be awarded.

DENTAL ASSISTANT

SEMESTER 1

No.	Course Title	Class	Lab	Credits
AD 100	Dental Assisting Techniques 1	2	3	3
AD 102	Oral Anatomy	2		2
AD 103	Dental Radiology 1	2	2	3
AD 105	Dental Sciences 1	2		2
AD 106	Dental Materials 1	2	3	3
LE 100	English Composition 1 (Note)	3		3
MB 148	Basics of Anatomy & Physiology (Note)	3	2	4
		16	10	20

SEMESTER 2

AD 200	Dental Assisting Techniques 2	2	3	3
AD 201	Dental Sciences 2	3		3
AD 202	Dental Records	2		2
AD 203	Dental Radiology 2		2	1
AD 204	Clinical Affiliation		20	5
		7	25	13

SUMMER

LE 203	Fundamentals of Speech	3		3
NP 100	General Psychology	3		3
		6		6

Note: LE 100 and MB 148 should be taken the summer before Semester 1.

Descriptions of courses offered by this department begin on page 223.

Dental Hygiene

Associate Degree Program

The Dental Hygiene program educates men and women to become vital members of the dental health profession. The two-year basic core curriculum leading to an Associate in Science degree follows the guidelines adopted by the American Dental Association's Commission on Dental Accreditation. The graduate is eligible for licensing examination in each of the fifty states. She/he may transfer credits toward a Baccalaureate degree. The Dental Hygiene program is accredited by the Commission on Dental Accreditation of the American Dental Association, a specialized accrediting body recognized by the Council on Postsecondary Accreditation and by the United States Department of Education.

The curriculum is designed to provide the student a broad educational experience. The student is thus prepared to render preventive oral health services and dental health education. Students receive clinical experience, at the STCC Dental Hygiene Clinic. Students are responsible to complete *clinical services* on a minimum number of patients. Patient recruitment is the responsibility of the student. Assistance will be provided by the College. The purchase of an instrument kit is mandatory for each dental hygiene student.

All courses listed in the program curricula are required for graduation. The dental hygiene courses are restricted to the semester in which they appear in the curricula. The curriculum customarily is completed within two regular academic years.

However, advanced placement will be given to those students qualifying through challenge exams and transfer credits.

Applicants for admission to the Dental Hygiene program must be high school graduates or the equivalent. The candidate must have completed courses in Algebra 1, Algebra 2, or geometry, biology, and chemistry with grades of "C" or better. The SAT's are required for admission with minimum scores of 400 on both the verbal and math portions of the test.

Students must achieve a minimum grade of "C" (73%) or better in each Dental Hygiene course. In addition, students must attain a minimum grade of "C" (73%) or better in related science or general studies courses. The student who is unable to meet this minimum requirement will be withdrawn from the program. Application for re-entry will be based on the recommendations of the faculty and program coordinator.

Upon completion of the requirements for this program, as listed below, the degree of **Associate in Science in Dental Hygiene** will be awarded.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MB 132	Anatomy & Physiology 1	3	2	4
MB 140	Biochemistry	3		3
AH 103	Oral Anatomy 1	2		2
AH 101	Clinical Practice 1	2	6	4
AH 104	Dental Radiology	2	2	3
		<hr/> 15	<hr/> 10	<hr/> 19

SEMESTER 2

MB 121	Microbiology	3	3	4
MB 232	Anatomy & Physiology 2	3	2	4
AH 200	Nutrition	2		2
AH 201	Oral Pathology	2		2
AH 202	Clinical Practice 2	2	8	5
AH 203	Oral Anatomy 2	2		2
		<hr/> 14	<hr/> 13	<hr/> 19

SEMESTER 3

NP 100	General Psychology	3		3
AH 300	Periodontology	2		2
AH 301	Dental Materials 1	2	3	3
AH 302	Pharmacology	2		2
AH 303	Clinical Practice 3	2	12	6
		<hr/> 11	<hr/> 15	<hr/> 16

SEMESTER 4

LE 203	Fundamentals of Speech	3		3
NS 100	Intro. to Sociology	3		3
AH 400	Community Dental Health	3		3
AH 401	Clinical Practice 4	2	12	6
AH 402	Applied Dental Auxiliary Skills	1	3	2
		<hr/> 12	<hr/> 15	<hr/> 17

Descriptions of courses offered by this department begin on page 225.

Diagnostic Medical Sonography

Associate Degree Program

Diagnostic medical sonography is a rapidly growing technology, used to locate, evaluate, and record pertinent anatomical, pathological, and functional data to aid the physician in the diagnosis of disease and injury. The graduate of this program may be employed in a wide variety of health care settings. The STCC program is a careful blend of didactic, laboratory, and hands-on clinical experiences that prepares the successful graduate for the specialties of abdominal and OB/GYN sonography. Each student is also introduced to vascular sonography, one of the fastest growing specialties in the field.

Graduates of this program of study will be awarded the Associate in Science degree and will be eligible to sit for the American Registry of Diagnostic Medical Sonographers Registry Examination to earn the title of Registered Diagnostic Medical Sonographer.

Applicants must be high school graduates or hold a certificate of equivalency. Applicants must also have completed high school Algebra 2, biology and chemistry. College Board examinations (SATs) are required.

On the STCC placement tests, students must demonstrate competencies equal to Algebra 2 and test out equal to MM 125, and achieve admission to college-level English (LE 100).

Students will also have to have a physical examination/immunization and recommendation from the examining physician that s/he is physically fit for the program and subsequent clinical affiliation.

Minimum Grade Requirement

The Diagnostic Medical Sonography student must achieve a minimum grade of "C" (73%) in each Diagnostic Medical Sonography course and in the health science and science courses.

Upon the successful completion of the requirements for this program as listed below, the degree of **Associate in Science in Diagnostic Medical Sonography** will be awarded.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MB 132	Anatomy & Physiology 1	3	2	4
AS 100	Sonographic Physics and Instrumentation 1	2	2	3
AS 205	Intro. to Diagnostic Medical Imaging	3		3
MM 125	Mathematics and Algebraic Functions	3		3
		<hr/> 14	<hr/> 4	<hr/> 16

SEMESTER 2

LE 200	English Comp. 2: Intro. to Lit.	3		3
MB 232	Anatomy & Physiology 2	3	2	4
AS 201	Sonographic Instrumentation 2	2	2	3
MB 340	Sectional Anatomy 2	2	2	3
AS 200	Sonographic Physics 2	2	2	3
		<hr/> 12	<hr/> 8	<hr/> 16

SUMMER 1 (8 Weeks)

AS 202	Sonographic Procedures 1	1	2	2
AS 203	Clinical Practicum 1		30	2
		<hr/>	<hr/>	<hr/>
		1	32	4

SEMESTER 3

NP 100	General Psychology	3		3
AS 300	Sonographic Procedures 2	2	2	3
AS 301	Clinical Practicum 2		12	3
AA 210	Health Science 2	2	2	3
AA 101	Medical Terminology 1	3		3
		<hr/>	<hr/>	<hr/>
		10	16	15

SEMESTER 4

LE 203	Fundamentals of Speech	3		3
NS 100	Introduction to Sociology	3		3
AS 400	Sonographic Procedures 3	2	2	3
AS 401	Clinical Practicum 3		12	3
		<hr/>	<hr/>	<hr/>
		8	14	12

SUMMER 2 (8 Weeks)

AS 402	Sonographic Procedures 4	1	2	2
AS 403	Clinical Practicum 4		30	2
		<hr/>	<hr/>	<hr/>
		1	32	4

Descriptions of courses offered by this department begin on page 227.

Medical Assistant

Associate Degree Program

This two-year program prepares students to become health care providers who have multiple skills, qualities, and abilities, and are able to meet the rigorous demands of our health care delivery systems. Graduates are capable of functioning in the hospital, clinic, neighborhood health center, health maintenance organization, insurance company, group practice or single physician's office. The Medical Assistant program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), on recommendation of the Committee on Accreditation for Medical Assistant Education, also known as the Curriculum Review Board of the American Association of Medical Assistants' Endowment (AAMAE). Graduates of the program are eligible to take the national certification examination for Medical Assistants and Phlebotomists.

The curriculum is designed to teach students to assist in administrative and clinical procedures in varied health care agencies. During the externship period students perform such duties as word processing, recordkeeping, billing, basic blood and urine tests, as well as assisting the physician in carrying out the techniques of patient care such as performing electrocardiograms, assisting with minor surgery, phlebotomy, and assisting with physical examinations. STUDENTS MUST BE AWARE THAT THE EXTERNSHIP PERIOD WILL REQUIRE TRAVELING TO THE

MEDICAL ASSISTANT

VARIOUS SITES, AND THAT THEY ARE RESPONSIBLE FOR THEIR OWN TRANSPORTATION. Graduates are qualified to accept positions in medical offices, clinics, health maintenance organizations, insurance companies, hospitals, ambulatory care centers, or any other area where their broad basic skills are needed.

Minimum Grade Requirements: To continue in the progression of courses offered in the Medical Assistant program, a student must obtain a grade of "C" (73%) or better in the following courses: AA 105 — Intro. to Medical Assisting; AA 202 — Medical Assistant Techniques 1; AA 305 — Medical Assistant Techniques 2; AA 403 — Medical Assistant Techniques 3; and AA 301 — Introduction to Human Disease. Students must maintain an average grade of "C" or better in all other courses. All students must achieve a level of 073 in math before entering the second semester of the freshman year. Medical Assistant courses are planned in conjunction with the clinical agencies, and may deviate from the College hours.

Upon successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Medical Assistant** will be awarded.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
AA 101	Medical Terminology 1	3		3
AA 105	Intro. to Medical Assisting	1		1
BZ 100	Basic Keyboarding Skills *	1		1
LE 100	English Composition 1	3		3
MB 104	Human Biology 1	3	2	4
AA 202	Medical Assistant Techniques 1	3	4	5
		14	6	17

SEMESTER 2

AA 301	Intro. to Human Disease	3		3
BZ 260	Medical Word Processing	1	4	3
MB 204	Human Biology 2	3	2	4
AA 305	Medical Assistant Techniques 2	3	4	5
AA 206	Venipuncture ***	1	2	1
AA 306	Lab Procedures for Medical Assistant ***	2	2	3
		13	14	19

SEMESTER 3

AA 319	Dosage and Calculations **	1		1
AA 320	Pharmacology **	3		3
BZ 265	Administrative Medical Asst. Procedures	3		3
NP 100	General Psychology	3		3
AA 111	Human Sexuality	1		1
AA 112	Living and Dying	1		1
AA 113	Skills for Health	1		1
		13		13

SEMESTER 4

AA 119	Applied Legal Concepts (Med. Asst.)	1		1
AA 403	Medical Assistant Techniques 3	2	28	8
LE 200	English Comp. 2: Intro. to Literature	3		3
	Elective: English	3		3
		<hr/> 9	<hr/> 28	<hr/> 15

BZ 100 Basic Keyboarding is recommended prior to entry into department.

* BZ 104 Typing 1 may be substituted.

** AA 319 and AA 320 must be taken concurrently

*** AA 206/AA 306 required before affiliation.

Semesters 3 and 4 may be interchanged for purposes of externship.

MEDICAL RECORD CODING SPECIALIST**Certificate of Completion Program**

The Medical Record Coding curriculum is planned to improve the accuracy, consistency, and reliability of health data; to increase the supply of the quality coding labor force; to validate the coder's legitimacy to potential employers; and to provide assurance of qualifications to institutions when they are the recipients of coding reviews. The awarding of the certificate upon completion of the program of study provides recognition to individuals with strong coding skills, and qualifies the graduate to write the Medical Record Coding Specialist Certification Examination prepared by the American Health Information Management Association after practice in the field.

A Medical Record Coding Specialization is an ethical individual who analyzes medical records and assigns codes to index diagnoses and procedures to support clinical care; to assist medical research in hospitals, physicians' offices, and other health care facilities; and to provide information for reimbursement purposes. Coding is the transformation of verbal descriptions of diseases, injuries, and procedures into numerical designations.

Students must achieve a minimum "C" (73%) or better in every course. The student who is unable to meet the minimum requirement will be withdrawn from the program.

A practicum may be included by special arrangement.

An applicant for the program must be a high school graduate or the equivalent (GED) or have a United States high school equivalency as evaluated by a credential evaluation service for foreign-educated candidates. She/he must place on the LE 100 level on the STCC English placement test.

MEDICAL ASSISTANT

SEMESTER 1

No.	Course Title	Class	Lab	Credits
AA 101	Medical Terminology 1 *	3		3
AA 450	Medical Records **	4		4
MB 148	Essentials of Human Anatomy & Physiology	3	3	4
AA 451	Medical Coding 1 ***	3		3
		<hr/> 13	<hr/> 3	<hr/> 14

SEMESTER 2

AA 320	Pharmacology	3		3
AA 301	Introduction to Human Disease	3		3
BZ 260	Word Processing (WordPerfect) ****	3		3
AA 452	Medical Coding 2 *****	3	6	5
		<hr/> 12	<hr/> 6	<hr/> 14

* Must test at LE 100 level

** Prerequisite or concurrent: AA 101, MB 148

*** Prerequisites or concurrent: AA 450, MB 148, AA 101

**** Completion of BZ 100 Keyboard Skills or BZ 104 Typing

***** Prerequisites: AA 451; Prerequisite or concurrent: AA 320, AA 301

Upon the successful completion of the requirements of this program, a **Certificate of Completion in Medical Record Coding Specialist** from STCC will be awarded.

Descriptions of courses offered in this program begin on page 279.

Nuclear Medicine Technology

Associate Degree Program

Nuclear Medicine Technologists utilize radioactive materials or tracers for the diagnosis or treatment of diseases. When introduced into the body, a radiotracer behaves like its nonradioactive counterpart. Therefore, its location in the body can be traced by using an appropriate detector.

The Nuclear Medicine Technologist learns to prepare and administer the radiotracer, perform the radionuclide study which may include the use of a computer, and then produce a final qualitative or quantitative product, so that a diagnosis and/or treatment may be made by a physician who specializes in the field.

The Nuclear Medicine Technology program at STCC is 24 months in length, beginning in September and ending two full years later. Students spend two or three days each week on clinical affiliation at Baystate Medical Center, the largest medical center in Western New England; Hartford Hospital; Providence Hospital; Manchester Memorial Hospital; or Mercy Hospital. The rest of the week is spent at the College in courses. The curriculum includes two summer sessions. The cost for the summer session is at the Division of Continuing Education rate.

Minimum course requirement for graduation in all subjects is a grade of "C" or better. A more complete description of the program requirements may be found in the Handbook for the Radiologic Sciences which is distributed at the beginning of

each Fall semester. At graduation the student receives an Associate in Science in Nuclear Medicine Technology, and is eligible to apply for the national registry examination given by the American Registry of Radiologic Technologists and the Nuclear Medicine Technology Certification Board. The program also meets the requirements for state licensing application. The program is fully accredited by the Joint Review Committee on Educational Programs in Nuclear Medicine Technology.

Applicants should have completed Algebra 1 & 2, chemistry, and a biological science. Submission of SAT scores is required for admission. Students are responsible for cost of uniforms, radiation monitors, physical examinations, health insurance, liability insurance, books, calculator, and laboratory manuals.

Upon successful completion of the requirements listed below, the degree of **Associate in Science in Nuclear Medicine Technology** will be awarded.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
AZ 102	Intro. to Nuclear Medicine Tech.	3		3
AZ 103	Practicum 1		16	2
AA 101	Medical Terminology 1	3		3
AA 210	Health Science 2	2	2	3
MB 132	Anatomy & Physiology 1	3	2	4
AX 114	Radiation Protection	1		1
AZ 104	Orientation to Practicum	1		
		<hr/>	<hr/>	<hr/>
		13	20	16

SEMESTER 2

AZ 207	Practicum 2		16	2
AA 111	Human Sexuality	1		1
AA 112	Living and Dying	1		1
AA 113	Skills for Health	1		1
MB 232	Anatomy & Physiology 2	3	2	4
LE 100	English Composition 1	3		3
AZ 210	Nuclear Imaging of Organs	3		3
AZ 211	Nuclear Cardiology	1		1
		<hr/>	<hr/>	<hr/>
		13	18	16

SUMMER 1 (11 Weeks)

AZ 209	Practicum	2	38	5
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SEMESTER 3

AZ 301	Practicum 3		24	5
MP 300	Radiologic Physics 1	3	2	4
BD 192	Computer Concepts for Allied Health	1	2	2
AZ 306	Statistics and Instrumentation	3		3
		<hr/>	<hr/>	<hr/>
		7	28	14

NUCLEAR MEDICINE TECHNOLOGY

SEMESTER 4

AZ 401	Practicum 4		24	5
AZ 414	In Vitro and Non-Imaging Studies	2		2
MP 400	Nuclear Physics 1	3	2	4
LE 200	English Composition 2	3		3
AX 414	Radiation Biology	1		1
AA 207	Venipuncture with Affiliation	1	2	1
AL 409	Lab Skills in Nuclear Medicine	1	3	1
		11	31	17

SUMMER 2 (11 Weeks)

AZ 410	Practicum	4	36	5
		4	36	5

Descriptions of courses offered by this department begin on page 283.

Occupational Therapy Assistant

Associate Degree Program

Occupational therapy practice is based on the functional performance of purposeful activities. The roles and skills required to develop and maintain the capacity to perform these activities are in essence one's occupation and occupational tools. Occupational therapy is the art and science of directing participation in tasks to restore, reinforce, and enhance performance; facilitate learning essential for adaptation and productivity; diminish or correct pathology; and promote and maintain health throughout the lifespan. Occupational therapy serves a wide population in a variety of settings such as hospitals and clinics, rehabilitation facilities, long-term care facilities, extended care facilities, sheltered workshops, schools, camps, private homes and community agencies and centers.

The Occupational Therapy Assistant program has initiated accreditation procedures with the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA), located at 4720 Montgomery Lane, P.O. Box 31220, Bethesda, MD 20824-1220. AOTA's phone number is (301) 652-AOTA. Once accreditation of the program has been obtained, its graduates will be able to sit for the national certification examination for the occupational therapy assistant administered by the American Occupational Therapy Certification Board (AOTCB). After successful completion of this exam, the individual will be a Certified Occupational Therapy Assistant (COTA). Most states require licensure in order to practice; however, state licenses are usually based on the results of the AOTCB Certification Examination.

The Certified Occupational Therapy Assistant will be able to provide direct service to the client under the supervision of the Registered Occupational Therapist. Supervision is dependent on the specific service provided and the competency of the occupational therapy assistant. Employment opportunities are available not only regionally, but nationally.

The Occupational Therapy Assistant curriculum is competency-based. It prepares the graduate to participate in a comprehensive health care plan for the client. A

OCCUPATIONAL THERAPY ASSISTANT

three-fold program is utilized: prevention and health maintenance, remediation, and daily life tasks and vocational adjustment. The student must be mindful that one semester is spent in supervised practice which will require travel and related expenses. This Level 2 Fieldwork must be completed within 18 months of the didactic coursework.

Admission Standards and Criteria

Applicants must be high school graduates or hold a certificate of equivalency. Applicants must have completed high school Algebra 2, biology, and chemistry. College Board exams (SATs) will be required. On the STCC placement tests, students must demonstrate competencies for Algebra 2 and admission to college-level English (LE 100).

Students must also have a physical examination/immunization and recommendation from the examining physician that s/he is physically fit for the program and subsequent clinical affiliations. Experience in the health care field and/or exposure to occupational therapy practice will be taken into consideration for acceptance.

Minimum Grade Requirement

Occupational Therapy Assistant students must achieve a minimum grade of "C" (73%) or better in each occupational therapy course. In addition, students must attain a minimum grade of "C" (73%) or better in related science and general study courses. The student who is unable to meet this minimum requirement will be withdrawn from the program. Application for reentry will be based on the recommendation of the Department Chair.

Upon successful completion of the requirements listed below, the degree of **Associate of Science in Occupational Therapy Assistant** will be awarded.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
AF 100	Occup. Therapy Asst.1	3	4	5
NP 100	General Psychology	3		3
MB 132	Anatomy & Physiology 1	3	2	4
		12	6	15

SEMESTER 2

AF 200	Occupational Therapy Assistant 2	3	4	5
AF 201	Physical Pathology	3		3
MB 232	Anatomy and Physiology 2	3	2	4
NP 325	Lifespan Human Growth & Development	3		3
		12	6	15

SUMMER 1

NS 100	Introduction to Sociology	3		3
LE 200	English Composition 2: Intro. to Literature	3		3
		6		6

OCCUPATIONAL THERAPY ASSISTANT

SEMESTER 3

AF 300	Occupational Therapy Assistant 3	3	4	5
AF 301	Psychosocial Pathology	3		3
AF 302	Occupational Therapy Media	2	2	3
AF 303	Principles of Management in O.T.	3		3
		<hr/> 11	<hr/> 6	<hr/> 14

SEMESTER 4

AF 400	Occupational Therapy Assistant Seminar	2		2
AF 401	Occupational Therapy Assistant Practicum 1		16	4
AF 402	Occupational Therapy Assistant Practicum 2	<hr/> 2	<hr/> 16	<hr/> 4
		2	32	10

Descriptions of courses offered by the department begin on page 287.

Physical Therapist Assistant

Associate Degree Program

The objective of this program is to prepare men and women for employment in the physical therapy field. The graduate physical therapist assistant works under the direction and supervision of a registered physical therapist performing patient-related activities and other tasks required for the operation of the service. The two-year curriculum leading to an Associate Degree follows the guidelines adopted by the American Physical Therapy Association. The curriculum is designed to develop technical knowledge and skills and background information for understanding in anatomy, physiology, kinesiology, disease processes, psychological and interpersonal relations. In addition, emphasis is placed on ethical and legal aspects. Approximately one semester of the program is supervised practice in selected clinical settings. The program is fully accredited by the Commission on Accreditation in Physical Therapy of the American Physical Therapy Association through 1997.

To be admitted to the program, an applicant must have completed high school level courses in algebra 1 & 2, chemistry, biology, and four years of English. In addition, the candidate for admission must have achieved SAT scores of 450 on the math and 450 on the verbal sections of the test. An applicant who is lacking the required math must complete algebra 1 and 2 BEFORE admission to the program. Completion of anatomy & physiology before admission to the program is a definite advantage to the applicant. It is strongly recommended that applicants should have spent time observing or volunteering in a physical therapy department prior to application. An interview with the program director is advised.

Applicants to the Physical Therapist Assistant program should be aware that this is a physically demanding occupation, often requiring lifting and supporting of heavy patients. Good communication skills, both oral and written, are essential to satisfactory functioning as a physical therapist assistant.

Minimum Grade Requirement: The Physical Therapist Assistant student must obtain a minimum grade of "C" (73%) in all required courses. In addition to the above

PHYSICAL THERAPIST ASSISTANT

requirement, the student must have earned a minimum of 61 credits with a cumulative quality point average of 2.0 in order to be eligible for graduation.

Without exception, failed courses in Physical Therapist Assistant require that the student reapply to the program. This privilege may be used only once.

It should be noted that a student must satisfactorily complete Anatomy & Physiology courses (MB 132, MB 232) before entering the third semester. All course work must be completed before the clinical affiliation in the fourth semester.

Senior students in Physical Therapist Assistant will take their spring vacation during the week following their second five-week affiliation. This will occur one or two weeks after the regularly scheduled College spring vacation.

The graduate Physical Therapist Assistant may apply to sit for the state licensing exam in Massachusetts. Proof of satisfactory completion of the program is required by the licensing board. Licensure is required in Massachusetts.

Upon the successful completion of the requirements for this program, as listed below, the degree of **Associate in Science in Physical Therapist Assistant** will be awarded.

SEMESTER 1

No	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MB 132	Anatomy & Physiology 1	3	2	4
NP 100	General Psychology	3		3
AP 100	Phys. Therapist Asst. 1	2	4	4
AA 101	Medical Terminology 1	3		3
		<hr/> 14	<hr/> 6	<hr/> 17

SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
MB 232	Anatomy & Physiology 2	3	2	4
AP 200	Kinesiology	3	2	4
NP 325	Lifespan Human Growth and Development	3		3
AP 201	Phys. Therapist Asst. 2	2	4	4
		<hr/> 14	<hr/> 8	<hr/> 18

SEMESTER 3

AP 300	Pathological Conditions	3		3
AP 301	Phys. Therapist Asst. 3	2	4	4
AP 302	Muscle Testing	1		1
NS 100	Intro. to Sociology	3		3
AA 211	Health Science 3	1		1
BB 311	Basic Legal Concepts	1		1
		<hr/> 11	<hr/> 4	<hr/> 13

SEMESTER 4

AP403	Supervised Clin. Exp.		18	6
AP 404	Supervised Clin. Exp.		18	6
AP 402	Physical Therapist Asst. Seminar	1		1
		<hr/> 1	<hr/> 36	<hr/> 13

Descriptions of courses offered by this department begin on page 296.

Radiation Therapy Technology

Associate Degree Program

This program is designed to prepare students for entry-level positions as staff therapists, working as essential members of the health care team, using radiation for the treatment of disease. Students are exposed to the full range of radiation therapy equipment available and develop proficiency in delivering a planned course of treatment.

During the academic year, students spend alternating days in Practicum at the clinical sites and at the College for classroom instruction. The 10-week summer sessions involve primarily clinical instruction, and students are charged through the Division of Continuing Education. A special liability insurance policy must be carried, as Radiation Therapy students are not covered in the regular College blanket policy. The policy costs \$150 per student per year.

Students must maintain grades of "C" (73%) or better in all subjects in order to be eligible for graduation from the program. Upon successful completion of the program requirements, the student is awarded the degree of Associate in Science in Radiation Therapy Technology. The program is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT). Graduates are eligible to apply for the national examination administered by the American Registry of Radiologic Technology, as well as for licensure with the Commonwealth of Massachusetts.

Applicants must have a high school diploma or equivalent, having completed Algebra 2, biology, and chemistry with grades of "C" or better. Students are required to present SAT scores with application to the program, and combined scores should total 800 or better.

Upon the successful completion of requirements for this program, as listed below, the degree of **Associate of Science in Radiation Therapy Technology** will be awarded.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
AY 103	Practicum		8	2
AA 101	Medical Terminology 1	3		3
AA 210	Health Science 2	2	2	3
MB 132	Anatomy & Physiology 1	3	2	4
AX 114	Radiation Protection	1		1
AY 104	Intro. to Radiation Oncology	3		3
MM 101	Trigonometry	1		1
		13	12	17

SEMESTER 2

AY 207	Practicum		12	3
MB 232	Anatomy & Physiology 2	3	2	4
AY 209	Dosimetry & Treatment Planning	3	2	4
LE 100	English Composition 1	3		3
NP 100	General Psychology	3		3
		12	16	17

SUMMER 1 (10 Weeks)

AY 208	Practicum	3	29	5
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SEMESTER 3

AY 301	Practicum		20	5
AY 303	Radiographic Imaging	1		1
MP 300	Radiologic Physics 1	3	2	4
AY 304	Clinical Oncology 1	3		3
BD 192	Computer Concepts for Allied Health	1	2	2
		<hr/> 8	<hr/> 24	<hr/> 15

SEMESTER 4

LE 200	English Comp. 2: Intro. to Lit.	3		3
AY 413	Practicum		20	4
MP 400	Nuclear Physics 1	3	2	4
AY 409	Clinical Oncology 2	3		3
AX 414	Radiation Biology	1		1
AA 206	Venipuncture	1	2	1
		<hr/> 11	<hr/> 24	<hr/> 16

SUMMER 2 (10 Weeks)

AY 407	Practicum	3	32	5
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Descriptions of courses offered by this department begin on page 302.

Radiography

Associate Degree Program

The Radiography program prepares an individual to become a member of the allied health team, assisting in the diagnostic methodologies of radiology. The program is based on a twenty-three month curriculum, and students must complete requirements within this two-year period.

The affiliate hospitals of Baystate Medical Center, the largest medical center in Western New England, provide the major clinical component. Travel arrangements to and from the affiliates are the responsibility of the student. Minor affiliations are available on a limited basis. Intersessions and summer sessions provide the major clinical component of the program. Additional clinical experience is assigned during the academic semesters. Students are charged for these periods according to College policy.

The College provides all didactic and laboratory classes. An energized x-ray unit, various phantoms (artificial body parts), and auxiliary equipment allow the student the development of psychomotor skills prior to patient exposure. Courses in anatomy and physiology, physics, computers, patient care, and general education complete the curriculum.

Upon completion of the program, students are eligible to apply for the national board examination in radiologic technology, administered by the American Registry of Radiologic Technology.

The program is fully accredited by the Joint Review Committee on Education in Radiologic Technology (JRECT). Copies of the *Essentials of an Accredited*

RADIOGRAPHY

Educational Program for the Radiographer are available from the office of the program director.

In order for a student to matriculate in Radiologic Technology, he or she must maintain a quality point average of 2.0 (73%-76%) in all course work.

Students not meeting the minimum grade requirement of "C" (73%) will be withdrawn from the program. Students must satisfactorily complete Anatomy and Physiology courses (MB 132, MB 232) before entering the third semester.

Applicants for admission to the program should have completed two years of high school algebra or MM 093 or its equivalent and one year each of biology and chemistry, and the S.A.T.'s, with a combined score of 800.

NOTE: Clinical Orientation is required prior to Clinical Practicum.

Upon successful completion of the requirements of the program, as listed below, the degree of **Associate in Science in Radiography** will be awarded.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
AX 111	Radiographic Positioning 1	3	2	4
AX 112	Image Production and Evaluation	2	1	2
AA 101	Medical Terminology 1	3		3
AA 210	Health Science 2	2	2	3
MB 132	Anatomy and Physiology 1	3	2	4
AX 114	Radiation Protection	1		1
AX 115	Introduction to Radiography	1		1
		<hr/> 15	<hr/> 7	<hr/> 18

INTERSESSION 1 (1 Week)

AX 001	Clinical Orientation 1		40	
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SEMESTER 2

AX 211	Radiographic Positioning 2	3	2	4
AX 212	Equipment Operation and Maintenance	2	1	2
AX 213	Clinical Practicum 1		16	2
MB 232	Anatomy and Physiology 2	3	2	4
LE 100	English Composition 1	3		3
		<hr/> 11	<hr/> 21	<hr/> 15

SUMMER 1 (9 Weeks)

AX 214	Clinical Practicum 2		40	5
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SEMESTER 3

AX 311	Special Procedures in Radiography	2		2
AX 313	Clinical Practicum 3		24	3
MP 300	Radiologic Physics 1	3	2	4
AX 314	Radiographic Positioning 3	3	1	3
AA 111	Human Sexuality	1		1
AA 112	Living and Dying	1		1
AA 113	Skills for Health	1		1
		<hr/> 11	<hr/> 27	<hr/> 15

SEMESTER 4

AX 411	Radiologic Pathology	1		1
AX 412	Ancillary Theory and Procedures	1		1
AX 413	Seminar/Quality Control	3		3
AX 414	Radiation Biology	1		1
AX 415	Clinical Practicum 4		24	3
LE 200	English Comp. 2: Intro. to Lit.	3		3
BD 192	Computer Concepts for Allied Health	1	2	2
AX 417	Advanced Radiation Protection	1		1
AA 206	Venipuncture	1		1
		12	26	16

SUMMER 2 (9 Weeks)

AX 416	Clinical Practicum 5		40	5
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Descriptions of courses offered by this department begin on page 303.

Respiratory Care

Associate Degree Program

Respiratory Care is a health specialty involved in the treatment, management, diagnosis and care of patients with cardiopulmonary dysfunction. The respiratory care practitioner is an expert in the use of therapeutic gases, ventilatory support, bronchopulmonary drainage, breathing exercises, cardiopulmonary resuscitation, aerosol administration, hyperinflation therapy, medications, humidification, and maintenance of natural, artificial, and mechanical airways. Respiratory care practitioners are also involved in diagnostic testing, monitoring, treatment, education, sales, and research. These include the measurement of lung volumes, pressures, flows, blood gas analysis, electrocardiograms, stress testing, sleep studies, smoking cessation, and pulmonary rehabilitation.

Respiratory care offers the chance to work closely with patients and other health care practitioners in a career which is both personally and financially rewarding.

The graduate practitioner will find a health care system that is changing and expanding. In many areas of the health care system, a multi-skilled practitioner will be needed. The graduate respiratory care practitioner will be this person. While the greater number of graduates work in hospitals or hold teaching positions, the future undoubtedly will see openings in industry, rehabilitation centers, home care companies, nursing homes, health maintenance organizations, and individual businesses.

This program is sponsored by the College in cooperation with area hospitals, pulmonary rehabilitation programs, long-term care facilities, and home care agencies. The program is fully accredited by the Joint Review Committee for Respiratory Therapy Education (JRCRTE) in conjunction with the Commission on Accreditation of Allied Health Education Programs (CAAHEP).

The curriculum includes a summer session. Students are charged for this session at the regular Division of Continuing Education rate.

RESPIRATORY CARE

1.) Admission Requirements

High school graduate or equivalent

PREREQUISITES: College Algebra 2 (MM 100, 3 credits, or its equivalent), biology and chemistry

College placement tests, reading tests, and SATs

Students must submit a required health form prior to September 1 in the year of their initial enrollment

Any disabilities must be within safe limits for both students and patients. It should be noted that the affiliating hospitals require by contract proof of satisfactory health, and reserve the right to refuse affiliation for students. Therefore, health status is subject to contract terms.

Students' physical and mental ability must withstand the vigorous demands of respiratory care (i.e., be able to move patients and work under stress.)

2.) Academic Requirements

No grade lower than a "C" (73%) will be accepted toward graduation in respiratory care. Students not meeting this grade requirement in any course will be withdrawn from the program. Failure in an affiliation course will result in dismissal from the program. Grades of less than "C" will not be accepted in transfer.

The following clinical lab courses may have a 7:00 A.M. starting time.

AR 213 Respiratory Rehabilitation

AR 307 Respiratory Care 3

AR 405 Respiratory Care 4

AR 406 Resp. Care Applied Clin. Science 2

Upon successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Respiratory Care** will be awarded.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
AR 104	Introduction to Respiratory Care	3		3
AR 105	Respiratory Care 1	3	2	4
LE 100	English Composition 1	3		3
MB 132	Anatomy & Physiology 1	3	2	4
MB 140	Biochemistry	3		3
		15	4	17

SEMESTER 2

AR 205	Respiratory Care 2	3	2	4
AR 206	Respiratory Care 3	3		3
BD 192	Computer Concepts for Allied Health	1	2	2
LE 200	English Comp. 2: Intro. to Lit.	3		3
MB 232	Anatomy & Physiology 2	3	2	4
AA 211	Health Science 3	1		1
AA 206	Venipuncture	1		1
		15	6	18

SUMMER 1 (8 Weeks)

AR 213	Respiratory Care 4	4	20	6
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SEMESTER 3

AR 303	Intensive Respiratory Care	3		3
AR 305	Pulmonary Function Testing	3		3
AR 306	Resp. Care Applied Clin. Sci.1	2		2
AR 307	Respiratory Care 5	3	12	6
MB 121	Microbiology	3	3	4
		<hr/>	<hr/>	<hr/>
		14	15	18

SEMESTER 4

AR 405	Respiratory Care Practicum		12	3
AR 406	Resp. Care Applied Clin. Sci. 2	2	8	4
AR 409	Neonatal and Pediatric Care	3		3
AR 408	Respiratory Care 6	3		3
NP 100	General Psychology	3		3
		<hr/>	<hr/>	<hr/>
		11	20	16

Descriptions of courses offered by this department begin on page 305.

Surgical Technology

Associate Degree Program

The Surgical Technology program aims to prepare women and men to function as surgical technologists who are integral members of the surgical team who work closely with surgeons, anesthesiologists, registered nurses, and other surgical personnel in delivering patient care and assuming appropriate responsibilities before, during and after surgery. Scrub, circulating, and second assisting surgical technologists have primary responsibility for maintaining the sterile field, being constantly vigilant that all members of the team adhere to aseptic technique.

An appreciation of the person having surgery, knowledge of common conditions requiring surgery, and the surgical procedure as well as skills of patient care are included. Ethical and legal dimensions of the work and profession of surgical technology are part of the program.

The program combines core courses in biological sciences, humanities, the specialty of surgical technology, and the role of the technologist. Supervised clinical practice in hospitals, surgical processing services, and operating rooms provide experiences to prepare for entry level positions in hospital operating rooms, surgeon's offices, and free-standing surgical centers.

This program is open for new students every other year. The next class will be admitted for the fall of 1996.

Accreditation of Program/National Credentialing of the Graduate

This program is fully accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) in conjunction with the Accreditation Review Committee on Education in Surgical Technology. Graduates of the program are eligible to apply for the national certifying examination in Surgical Technology (CST) given by the Association of Surgical Technologists.

Admission and Retention Requirements

An interview with the program director is highly recommended. Applicants must be high school graduates or the equivalent, with courses in biology, chemistry, and algebra. Developmental courses are available at STCC to meet these prerequisites. All students must achieve a level of 093 Math on the College Placement Test and LE 100 in the English Placement Test.

A minimum of 2.0 QPA is required in the first year to continue in the program. Students may not take the second year AO courses until first year biological science and surgical technology (AO) courses are completed. Surgical Technology courses must be taken in sequence.

The following courses require a minimum of the grades stated:

Anatomy and Physiology	C-
Microbiology	C-
Surgical Technology (AO) all courses	C

Health Requirements

A required health form must be completed prior to enrollment. In addition to the required college immunizations, prophalaxis against Hepatitis B is required. Any health limitations must be within safe limits for both students and patients.

The work in the operating room requires the ability to work on your feet, manual dexterity with fine coordinated motor skills, a stable temperament, attention to detail, and a strong sense of responsibility and integrity. Lifting patients and equipment is part of the work.

Special Scheduling

It should be noted that the clinical experience in the operating room is scheduled to begin at 7:00 a.m. rather than the routine College schedule. This will involve laboratories in AO 201, AO 304, AO 404, and AO 405.

Because this program admits students every other year does not mean that you cannot be admitted to the College and take courses. Taking courses does not imply that you will be admitted to Surgical Technology.

Upon successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Surgical Technology** will be awarded.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MB 132	Anatomy & Physiol. 1	3	2	4
AO 101	Intro. to Surgical Technology	3	3	4
AA 111	Human Sexuality	1		1
AA 112	Living & Dying	1		1
	Elective	3		3
		14	5	16

SURGICAL TECHNOLOGY

SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
MB 232	Anatomy & Physiol. 2	3	2	4
AO 201	Surgical Technology 2	3	6	5
AO 351	Biotechnology in Surgery	2		2
	Elective: Sociology/Anthropology	3		3
		<hr/> 14	<hr/> 8	<hr/> 17

SEMESTER 3

AO 304	Surgical Technology 3	4	20	9
MB 121	Microbiology	3	3	4
AA 320	Pharmacology	3		3
		<hr/> 10	<hr/> 23	<hr/> 16

SEMESTER 4

AO 403	Role of Surgical Technologist	2		2
AO 404	Surgical Technology 4	4		4
AO 405	Surgical Tech. 3 Practicum		24	6
BB 311	Basic Legal Concepts	1		1
		<hr/> 7	<hr/> 24	<hr/> 13

Descriptions of courses offered by this department begin on page 310.

Nursing

Associate Degree Program

The nursing curriculum is planned to prepare men and women to be professional nurses, competent to render safe and effective nursing care to people within the normal life cycle, both in health and illness. The community-centered approach combines both liberal and technical education for the student within the College and community health facilities. Graduates of the nursing program receive an Associate in Science in Nursing degree and are eligible to take the Computer Adaptive National Council Licensure Examination for Registered Nurses (NCLEX-RN). Individuals with previous court convictions must meet eligibility requirements of the Massachusetts Board of Registration in Nursing for licensure. The Dean of Nursing will elaborate on this issue at the nursing student orientation day held in May.

The program is approved by the Massachusetts Board of Registration in Nursing. It also has full accreditation by the National League for Nursing.

STCC has nursing articulation agreements with American International College, Elms College, Framingham State College, and the University of Massachusetts at Amherst, whereby students accepted into STCC's associate degree program are also accepted into the bachelor's degree nursing program of their choice to complete a four-year course of study.

Prerequisites for admission to the STCC Nursing Program call for the applicant to be a high school graduate or equivalent. The candidate also must have completed courses in algebra 2, chemistry and biology. The SAT's are required for admission with scores ranging in the 450s on each of the verbal and math portions of the test.

Students are required to maintain CPR certification (American Heart Association — professional rescuer) throughout the nursing program, beginning October 1 of the freshman year.

In order for a student to matriculate in the Division of Nursing, the student must maintain a quality point average of 2.30 in each nursing course.

Quality Point Average	Letter Grade	Numerical Grade
2.30	C+	77+

The final course grade is calculated as follows:

1. The average of three term exams and a final cumulative exam will equal 90% of the final grade. The grade of a special project (AN 100 paper/AN 300 teaching project) will equal 10% of the final grade. A final course grade of 2.3 (77%) or better is required to pass the course.
2. A student must pass the clinical portion of the course in order to qualify to write the final exam (grading for clinical portion is Pass-Fail). Transcript grade for clinical failure will be recorded as F.
3. An average of 2.30 (77+) on these exams is required to pass the course.

The final course grade, if below 2.30 (77+) will be recorded as a letter grade with transcript stamped: NOT ELIGIBLE FOR MATRICULATION IN NURSING. DATE

4. Without exception, no more than one failed/withdrawn nursing course may be repeated.

5. Readmission to the program is at the discretion of the nursing faculty and availability of seats.

Eligibility for Promotion:

- Students must attend scheduled lectures and clinical hospital laboratories.
- Students must pass academically and clinically.
- Students must achieve a minimum grade of "C" (73+) or better in the natural and biological sciences.

The Nursing math module (MM 077) must be successfully completed prior to AN 100, or by the end of the twelfth week of AN 100. Students must attain at least a "C" in related science courses, or a cumulative grade point average of 2.0. The clinical segments of the Nursing courses are planned in conjunction with the clinical agencies, and may deviate from the College hours.

Policy for use of challenge examination for AN 100 for admission of L.P.N.'s with advanced placement to STCC Division of Nursing:

1. The challenge examination for L.P.N.'s will be administered only after an L.P.N. with current registration has been fully admitted as a student in the Division of Nursing.
2. Records of the student show that the accumulated theory and clinical experience of the student meet the curriculum requirements for School of Practical Nursing in Massachusetts.
3. Fee and procedure for the examination will be commensurate with established College policy. The Division of Continuing Education is in charge of registration for the Nursing Challenge Examination for L.P.N.'s, and requires registration one week prior to exam administration, accompanied by a fee of \$7.50.
4. Guidelines that must be followed to successfully complete the challenge process for AN 100:
 - A. Write the AN 100 Challenge Examination for L.P.N.'s. This will be scheduled for administration once only, at the end of August. A student has the privilege of writing the examination once; no retakes are permitted. This examination provides the L.P.N. with an opportunity to validate knowledge of the concepts usually presented in AN 100, which is the foundation for the subsequent nursing courses.
 - B. Attainment of a 77+ is the minimum passing grade in theory. (77+ = C+ = 2.3 QPA) The challenge examination for AN 100 may not be retaken.
 - C. Recommendations for individualized learning will be made after analysis of performance on challenge exam.
 - D. Participate in a one-day knowledge and skill program.
5. Students who successfully complete the above guidelines will be entitled, upon paying a fee of \$10 per credit (\$70.00 total) to have their transcripts reflect 7 credits granted for AN 100.

NURSING

Upon successful completion of requirements for the Nursing program, as listed below, the degree of **Associate in Science in Nursing** will be awarded.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
MB 132	Anatomy & Physiol. 1	3	2	4
NP 100	General Psychology	3		3
AN 100	Primary Preventive Interventions 1A	4	10	7
MM 077	Math for Nursing	1		1
		<hr/> 11	<hr/> 12	<hr/> 15

SEMESTER 2

LE 100	English Composition 1	3		3
MB 232	Anatomy & Physiol. 2	3	2	4
NP 400	Prin. of Norm./Abn. Behav.	3		3
AN 201	Secondary/Tertiary Preventive Interventions 1A	4	12	8
		<hr/> 13	<hr/> 14	<hr/> 18

SEMESTER 3

MB 121	Microbiology	3	3	4
NS 100	Intro. to Sociology	3		3
AN 300	Secondary Tertiary Preventive Interventions 2A	4	15	9
		<hr/> 10	<hr/> 18	<hr/> 16

SEMESTER 4

AN 400	Secondary Preventive Interventions 3A	4	15	9
AN 401	Intro. to Nursing Management and Law	2		2
	Elective: Soc. Science	3		3
LE 200	English Composition 2: Intro. to Lit.	3		3
		<hr/> 12	<hr/> 15	<hr/> 17

Note: All courses must be taken prior to or during the semester as listed above.

MULTISKILLED HEALTH CARE TECHNICIAN

Certificate of Completion program

Graduates of this program are prepared for employment in the following occupations: nursing assistant in diverse health care settings, home health aide, responsible person in halfway homes and retirement homes, electrocardiography technician.

No.	Course Title	Credits
LE 100	English Composition 1	3
AA 101	Medical Terminology 1	3
MB 148	Basics of Anatomy & Physiology	4
AA 209	Interdisciplinary Health Team Roles and Responsibilities	3
AL 220	Environmental Safety for Health Care	2
AN 126	Skills for the Health Care Provider (Certified Nurse Aide/Homehealth Aide)	8
AA 215	Electrocardiography	1
AA 111	Human Sexuality	1
AA 112	Living and Dying	1
NP 325	Lifespan Human Growth and Development	3
		<hr/> 29

Upon successful completion of the requirements for this program, a **Certificate of Completion in Multiskilled Health Care Technician** from STCC will be awarded.

MULTISKILLED MENTAL HEALTH/MENTAL RETARDATION NURSING ASSISTANT

Certificate of Completion program

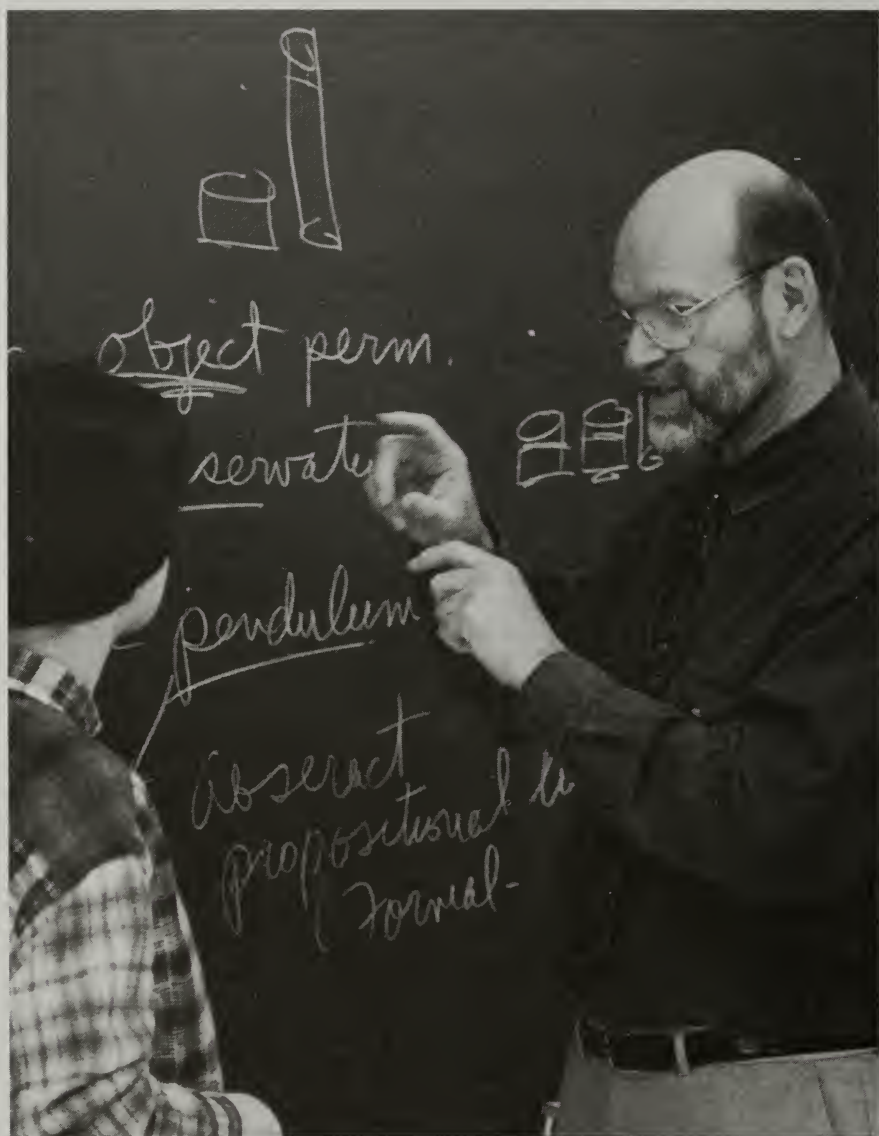
Graduates of this program are prepared for employment in one of the following occupations: nursing assistant/homehealth aide in group homes for the mentally handicapped client; nursing assistant in mental health institutions and/or psychiatric units of health care agencies; home health aide to individuals with mental health/mental retardation problems; responsible person in halfway homes, retirement homes, etc.

No.	Course Title	Credits
LE 100	English Composition 1	3
MB 148	Basics of Anatomy and Physiology	4
NP 325	Lifespan Human Growth and Development	3
AL 220	Environmental Safety for Health Care	2
AN 125	Basic Concepts: Mental Health/Mental Retardation	3
AN 126	Skills for the Health Care Provider (Certified Nurse Aide/Homehealth Aide)	8
AA 319	Dosage and Calculation	1
AA 324	Pharmacology for the Responsible Person	3
		<hr/> 27

Upon successful completion of the requirements for this program, a **Certificate of Completion in Multiskilled Mental Health/Mental Retardation Nursing Assistant** from STCC will be awarded.

Descriptions of courses offered by this department begin on page 285.

Liberal Arts and Sciences



Early Childhood Education

Associate Degree Program

This course of study is designed to meet the ever-expanding needs for trained personnel in the field of early learning and child care. Graduates of the two-year program will be prepared to work in non-public early learning environments such as infant/toddler centers, family day care homes, group day care centers, nursery schools, private kindergartens, health care agencies, institutions and other schools and organizations offering early learning programs and/or child care and family education services.

The curriculum is designed to meet the standards of the National Association for the Education of Young Children and the Massachusetts Office for Children categories of study, and will provide students with a comprehensive understanding of the child care profession. Formal instruction integrated with four semesters of field work in early childhood settings, under supervision, will develop teaching qualities and skills. Completion of these practica will enable the graduate who is twenty-one years of age to fulfill OFC Lead Teacher employment requirements. Admission to the Early Childhood program however, does not guarantee practicum placement.

Applicants for admission to this program must be high school graduates or equivalent. Early Childhood students must earn a 2.0 quality point average (C) for each major course offering within the program. Included in this designation are Natural History and prerequisite courses, as well as courses with an "NC" prefix. Upon the successful completion of requirements of this program, as listed below, the degree of **Associate in Science in Early Childhood Education** will be awarded.

SEMESTER 1

No	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
NC 100	Introduction to Early Childhood Education	3		3
NC 110	Child Growth & Develop.	3		3
NC 120	Early Child. Field Work 1		3	1
NP 100	General Psychology	3		3
NS 100	Introduction to Sociology	3		3
		15	3	16

SEMESTER 2

LE 200	Comp 2: Intro. to Lit.	3		3
NC 200	Curriculum for Early Childhood Educ. 1	3	3	4
NC 220	Early Child. Field Work 2		6	2
MM 124	Mathematics for a Technical Society	3		3
MB 100	Natural History	3	2	4
NC 215	Observing & Recording Child Behavior	2		1
		14	11	17

EARLY CHILDHOOD EDUCATION

SEMESTER 3

NC 300	Language & Reading Instruction in Early Childhood	3	3	4
LE 203	Fundamentals of Speech	3		3
NC 325	Understanding Child Behavior Sem.	2		2
NC 335	Early Childhood Practicum 1		12	4
NH 210	Survey of Modern U.S. History	3		3
		<hr/> 11	<hr/> 15	<hr/> 16

SEMESTER 4

NC 400	Early Childhood Practicum 2		18	6
NC 410	Health and Safety for Infants and Children	1		1
NC 425	Early Childhood Program Planning	3		3
NP 400	Principles of Normal/Abnormal Behavior	3		3
NS 250	Sociology of the Family	3		3
		<hr/> 10	<hr/> 18	<hr/> 16

Descriptions of courses offered by this department begin on page 229.

General Studies

The General Studies Division, through a core structure cited by the National Commission on Excellence in Education, prepares students who:

- wish to earn an Associate in Arts degree and qualify for transfer to a four-year college;
- enter four-year degree programs offered jointly by STCC and UMass/Amherst, or STCC and Fitchburg State College;
- have made a career decision, but must complete prerequisites for a specific program, improve skills measured by SAT examinations, or generally confirm their commitment to a particular field;
- are undecided about career direction and seek an exploratory period leading to either a transfer program or an occupational curriculum;
- need to develop English language skills in order to work successfully in a given program.

The General Studies cores reflect these student priorities, offering curriculum and support services in program options as follows:

Core 1 — **Transfer:** for the student electing one of the degree or transfer programs;

- Commonwealth Compact option, page 32
- University Without Walls option, page 171, and Core 9 below;

Core 2 — **Health Careers:** for the student contemplating application to a program in the fields of Health/Human Services or Nursing, pages 136-165;

Core 3 — **Technology:** for the student contemplating application to a program in the Division of Engineering Technologies;

- Core 4 — **Engineering:** for the student who wishes to major in the Science Transfer Option or to prepare for the Engineering Transfer program of the College;
- Core 5 — **Business:** for the student who plans application to a program in Business, Computer Information Systems, Office Administration, Cosmetology, Early Childhood Education, or Law Enforcement;
- Core 6 — **Bilingual Program:** for students who need to develop English language skills, an intensive and accelerated curriculum in English As a Second Language, as well as transitional courses in mathematics and Biology, with related counseling and support services;
- Core 8 — **Non-Matriculating:** students not matriculating in a program;
- Core 9 — **University Without Walls Program:** for students accepted into the bachelor's degree program offered jointly with UMass/Amherst, page 171.

Placement Testing

Both transfer and career programs require effective reading comprehension and English skills as well as a foundation in mathematics and science. Therefore, course assignments in these areas are based on the student's performance in a series of placement examinations taken after acceptance, but prior to scheduling and registration. Placement tests in mathematics, English, vocabulary development and reading comprehension are required of all entering students. It must be noted that, as prerequisites for college-level work, some courses may be required that are not acceptable to the General Studies degree.

Academic Advising and Counseling

General Studies advising staff and faculty advisors assist students in making academic decisions, pursuing program objectives, completing graduation requirements, or intra-college transfers to a career program. Students should refer questions to their assigned counselor/advisor or to the General Studies Division staff, at extension 3499.

General Studies Program Information Booklet

Published yearly, this booklet summarizes pertinent information about division procedures, and serves as the student's personal record of courses completed toward a degree or intra-college transfer.

It is the student's responsibility to seek out information required and act upon it. The catalog and the General Studies Program Information Booklet constitute the official policy of the program in matters of graduation or transfer.

In summary, the General Studies Division involves the student in a broad range of subjects from the major academic areas. Through the nine general electives allowed for the degree, its students are encouraged to explore career programs through electives in Business, Technologies, Health and Human Services. Developmental courses are available and may be required as prerequisites for English-speaking and non-English speaking students alike, based on test performance.

GENERAL STUDIES

Minimum requirements for the degree of Associate in Arts in Liberal Arts/General Studies:

<i>English Communications:</i>				
	English Composition 1			3 credits
	English Composition 2			3 credits
<i>Mathematics/Sciences:</i>				
	ONE college-level, transferable course in Mathematics			3 credits
	TWO college level, transferable courses in the Sciences			8 credits
<i>Behavioral/Social Sciences:</i>				
	Introduction to Sociology (NS 100)			3 credits
	General Psychology (NP 100)			3 credits
	ONE of the following:			
	Economics 1			
	History or Political Science or			
	Cultural Anthropology Elective			3 credits
<i>Humanities/Fine Arts:</i>				
	TWO courses selected from:			
	Art			
	College Theatre			
	Foreign Language			
	Music			
	Philosophy			6 credits
	ONE Literature Elective			3 credits
General Electives:				
	NINE college-level, non-developmental courses selected from the curriculum in Humanities, Mathematics, Natural or Social Sciences, OR from the degree requirements of another College program.			27 credits

MINIMUM OF 60 CREDITS REQUIRED

RECOMMENDED COURSE SEQUENCE

The following sequence is recommended; however, additional semesters may be required for students whose placement scores and/or high school background indicate a need to complete prerequisites for specific college-level courses.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
NS 100	Introduction to Sociology	3		3
	Elective: General	3		3
	Elective: General	3		3
	Elective: Mathematics (Note 1)	3		3
		15		15

SEMESTER 2

LE 200	English Composition 2	3		3
NP 100	General Psychology	3		3
	Elective: General	3		3
	Elective: Humanities	3		3
	Elective: Lab Science	3	3	4
		<hr/> 15	<hr/> 3	<hr/> 16

SEMESTER 3

	Elective: Humanities (Note 2)	3		3
	Elective: Social Science (Note 3)	3		3
	Elective: Lab Science	3		4
	Elective: General	3		3
	Elective: General	3		3
		<hr/> 15		<hr/> 16

SEMESTER 4

	Elective: General	3		3
	Elective: General	3		3
	Elective: General	3		3
	Elective: General	3		3
	Elective: Humanities	3		3
		<hr/> 15		<hr/> 15

Note 1: MM 101 or higher

Note 2: Restricted to literature electives

Note 3: Restricted to history, economics, or political science electives

NOTE: All courses presented for degree must be non-developmental and college-level to total 60 semester hours.

Students in Pre-Health, Pre-Technology, Pre-Engineering, or Pre-Service courses will find recommended priorities in the General Studies Information Booklet and should consult with their advisor.

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Arts in Liberal Arts/General Studies** will be awarded.

UNIVERSITY WITHOUT WALLS TRANSFER OPTION

The University Without Walls is an adult bachelor's degree program of the University of Massachusetts in which students design an individualized degree in a field of their choice, and have the option of converting learning from life experience into academic credit.

The University Without Walls transfer option (Core 9) of the General Studies associate degree provides adult learners with the opportunity to complete UMass general education requirements; develop critical reading, writing and thinking skills; and make connections between a liberal arts education and life experience. This option is ideal for adults who have career and life experiences and who are interested in a four-year degree, but have few or no college credits. This program is under the Commonwealth Transfer Compact. Students who graduate from this General Studies Option with a grade point average of 2.0 or better will be accepted into the University Without Walls, or into any state institution of higher learning.

GENERAL STUDIES

Students enrolled in this option become part of the larger Springfield Center University Without Walls student body, and are invited to participate in UWW social events and workshops, receive periodic mailings and newsletters from UWW, and maintain contact with the UWW advisors at STCC. For more information, contact Cecelia Gross, STCC/UWW advisor, at 781-7822, extension 3353, or Kate Koski, UWW Coordinator, Garvey Hall, Room 267, STCC, at 732-5262.

PROGRAM REQUIREMENTS

Minimum of 60 credits for the associate degree program in General Studies

Because most students in the Core 9 option will be part time, the required courses are not listed in semester sequence. It is recommended, however, that students complete LE 100 English Composition 1, as early as possible in their program.

		Credits
English		
LE 100	English Composition 1	3
LE 200	English Composition 2	3
Humanities		
	Literature elective	3
	Two electives in art, literature, philosophy, music, theater, or foreign language	6
Social Sciences		
	History elective	3
NP 100	General Psychology	3
NS 100	Introduction to Sociology	3
Science and Math		
	Science elective	3 or 4
	College math elective	3
	Science or college math elective	3 or 4
Analytical Reasoning (one of the following)		
BD 300	Microcomputer Applications	3 or 4
BD 101	Computer Concepts	
MM 142	Statistics	
MM 143	Business Statistics	
MM 155	Calculus	
Diversity		
Students must take two courses that involve studies of diverse cultures. This requirement can be met through the following courses which also fulfill requirements in social sciences or humanities		6
NS 110	Introduction to Anthropology	
LE 304	African-American Literature	
LE 308	Women in Literature	
NH 440	Far Eastern History	
NH 320	African-American History	

The remaining credits may be earned through elective courses. Students may pursue coursework in a particular field of interest or continue with a liberal arts program.

Upon successful completion of requirements for this program, as listed above, the degree of **Associate in Arts in Liberal Arts/General Studies** will be awarded.

DEVELOPMENTAL COURSES AVAILABLE

For students in need of developmental studies, the following courses are sometimes required as prerequisites for college-level work; however, they cannot be applied as graduation or transfer credit.

LD 081, 084, 087	Effective Reading for Bilinguals
LD 091, 092	Reading Level 1, 2
LD 099	Review for College Writing
LD 080, 083, 086	English as a Second Language I, II, III
LD 082	Basic English Conversational Skills I (Bilingual)
LD 085	Basic English Conversational Skills II (Bilingual)
LD 088, 093	Basic Writing Skills for Bilinguals
MM 071-073, 078	Basic Arithmetic
MM 081-083, 087	Elementary Algebra
MM 091-093, 097	Intermediate Algebra
MP 090	Basic Science I: Introduction to Chemistry
MB 090	Basic Science II: Introduction to Biology
ND 099	Freshman Seminar

Law Enforcement/Criminal Justice

Associate Degree Program

A criminal justice program is offered primarily for students desiring to pursue a career in Law Enforcement. In addition, students desiring a pre-law school course of study will find the Law Enforcement Program most advantageous as the case method of study is employed wherever possible. There is opportunity for in-service police officers who are desirous of improving their knowledge and abilities through study of specific police science courses and various general education subjects. The objective of this two-year program is to familiarize the student with legal, technical and practical aspects of law enforcement procedures. The ever-increasing crime rate, changing social order, changes in the criminal laws and major court decisions are all factors that have made the law enforcement officer's role one of extreme importance and ever-increasing complexity in modern society. Toward this end, the student will be provided with a strong background in the basic administration of justice as well as a general knowledge of the constitutional safe-guards as afforded in the Bill of Rights. This program also includes study in the social science area and a general choice of electives. Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Law Enforcement** will be awarded.

LAW ENFORCEMENT/CRIMINAL JUSTICE

SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
NS 100	Intro. to Sociology	3		3
NL 100	Criminal Procedures 1	3		3
NL 110	Intro. to Crim. Justice	3		3
	Elective	3		3
		<hr/>		<hr/>
		15		15

SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
NS 200	Social Problems	3		3
NL 200	Criminal Procedures 2	3		3
NL 230	Criminal Evidence	3		3
	Elective	3		3
		<hr/>		<hr/>
		15		15

SEMESTER 3

NP 100	General Psychology	3		3
NI 100	Amer. Gov't & Politics *	3		3
NL 300	Criminal Law 1	3		3
NL 340	Criminal Investigation	3		3
	Elective	3		3
		<hr/>		<hr/>
		15		15

SEMESTER 4

LE 202	Technical Report Writing	3		3
NP 400	Prin. of Normal/Abnormal Behavior	3		3
NL 400	Criminal Law 2	3		3
NL 450	Law Enforcement Mgmt. and Planning	3		3
	Elective	3		3
		<hr/>		<hr/>
		15		15

*NH 110 or NH 210 may be substituted.

Descriptions of courses offered by this department begin on page 266.

Liberal Arts Transfer

Associate Degree Program

LIBERAL ARTS TRANSFER OPTION

The Liberal Arts Transfer curriculum is designed to parallel the first two years of a four year institution's liberal arts program. It is for students who intend to transfer to a senior college and work toward a bachelor's degree. The minimum requirements for the degree are 62 semester hours (20 courses), a minimum cumulative quality point average of 2.0, including 6 credits of English Composition,

LIBERAL ARTS TRANSFER

12 credits in the Humanities, 15 credits in the Social Sciences, and 11 credits in Mathematics and Natural Sciences. Up to six credits may be earned through Cooperative Education. Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Arts in Liberal Arts Transfer** will be awarded.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
	Math: MM 101-103; MM 122; MM 124	3		3
	Liberal Arts Elective (Spanish Recommended)*	3		3
	Elective: History	3		3
NP 100	General Psychology	3		3
		<hr/> 15		<hr/> 15

SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
	Elective: History	3		3
	Liberal Arts Elective (Spanish Recommended)*	3		3
	Natural Lab Science	3	3	4
NS 100	Intro. to Sociology (or)			
NS 110	Intro. to Anthropology	3		3
		<hr/> 15	<hr/> 3	<hr/> 16

SEMESTER 3

	Literature Elective	3		3
	Laboratory Science	3	3	4
	Liberal Arts Elective (Spanish Recommended)*	3		3
LE 203	Fundamentals of Speech	3		3
NE 100	Economics 1	3		3
		<hr/> 15	<hr/> 3	<hr/> 16

SEMESTER 4

	Literature Elective	3		3
	Liberal Arts Elective (Spanish Recommended)*	3		3
NI 100	Am. Govt. and Politics	3		3
	Liberal Arts Elective *	3		3
	Humanities Elective**	3		3
		<hr/> 15		<hr/> 15

* Liberal Arts Electives include: Math, Science, Social Sciences (except NP 109), Humanities, Fine Arts, and BD 196 (Computing in the Arts and Sciences).

** Humanities Electives include: Art, Music, Drama or Philosophy.

LIBERAL ARTS TRANSFER

FINE ARTS OPTION

This Fine Arts Option is designed to parallel the first two years of a four-year college's art major. Students must complete a common core of liberal arts subjects (3 English/rhetoric; 3 math/science; 3 social science) and a fine arts core (Art History 1 and 2; Basic Drawing; Basic Design.) Seven electives must be chosen from liberal arts courses. A sample curriculum follows:

SEMESTER 1

No.	Course Title	Class	Lab	Credits
LA 146	Intro. To Art: Basic Design	3		3
LA 147	Basic Drawing	3		3
	Math: MM 101, 102, 103, 122 or 124	3		3
LE 100	English Composition 1	3		3
NP 100	General Psychology	3		3
		<hr/> 15		<hr/> 15

SEMESTER 2

LA 142	Painting 1 (or) other Liberal Arts Elective	3		3
LA 149	Drawing Composition (or) other Liberal Arts Elective	3		3
LE 200	Comp. 2: Intro. to Literature	3		3
	Lab Science	3	2	4
LA 143	Printmaking 1 (or) other Liberal Arts Elective	3		3
		<hr/> 15	<hr/> 2	<hr/> 16

SEMESTER 3

LA 140	Art History: Prehistoric to Gothic	3		3
NS 100	Intro. to Sociology	3		3
LA 242	Painting 2 or other Liberal Arts Elective	3		3
	Lab Science	3	2	4
	Elective: Literature or Art	3		3
		<hr/> 15	<hr/> 2	<hr/> 16

SEMESTER 4

LA 145	Figure Drawing (or) other Liberal Arts Elective	3		3
LA 240	Art History: Ren. & Baroque	3		3
LA 243	Printmaking 2 (or) other Liberal Arts Elective	3		3
	Elective: Liberal Arts	3		3
	Elective: History	3		3
		<hr/> 15		<hr/> 15

Upon the successful completion of the requirements for this program, the degree of **Associate in Arts in Liberal Arts Transfer** will be awarded.

EDUCATION TRANSFER OPTION

The education transfer curriculum is designed to parallel the first two years of the School of Education curriculum at the University of Massachusetts. Students in this core will have dual admission with the University as long as a 2.5 QPA is maintained. The minimum requirements for the degree are 62 semester hours (21 courses), a minimum cumulative quality point average of 2.0, including 6 credits of English composition, 18 credits in the humanities, 15 credits in the social sciences (18 for early childhood education and development), 13-14 credits in math and natural sciences, 6 credits in an art or science major, and a 3-credit education internship.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MM 122	Applied Mathematics 1	3		3
NS 100	Introduction to Sociology (or)			
NP 100	General Psychology (or)			
NI 100	American Government and Politics	3		3
	Elective: Lab Science	3	3	4
	Elective: History	3		3
		<hr/> 15	<hr/> 3	<hr/> 16

INTERSESSION

LT 001	Education Internship		60	3
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SEMESTER 2

LE 200	English Composition 2	3		3
NS 100	Introduction to Sociology (or)			
NP 100	General Psychology	3		3
NI 100	American Government and Politics	3		3
MB 142	Nutrition (or)			
	Elective: Humanities (Note 1)	3		3
	Elective: History	3		3
		<hr/> 15		<hr/> 15

SEMESTER 3

LE 203	Fundamentals of Speech	3		3
LE 305	Children's Literature (Note 2) (or)			
	Elective: Humanities	3		3
LF 121	Elementary Spanish 1 (Note 3)	3		3
NP 305	Child Psychology	3		3
	Elective: General (Note 4)	3		3
		<hr/> 15		<hr/> 15

LIBERAL ARTS TRANSFER

SEMESTER 4

LE 305	Children's Literature (Note 2) (or) Elective: Humanities	3		3
LF 221	Elementary Spanish 2 (Note 3)	3		3
NS 110	Introduction to Anthropology (or)			
NS 160	Multicultural USA (Note 5) (or)			
NS 250	Sociology of the Family	3		3
	Elective: General (Note 4)	3		3
	Elective: Science	3	3	4
		<hr/> 15	<hr/> 3	<hr/> 16

Note 1: Art, music, or drama

Note 2: A literature course must be taken

Note 3: Another foreign language may be taken through CCGS

Note 4: English, psychology, sociology, history, science, or math

Note 5: Required for students planning to major in Early Childhood Education and Development. Elementary Teacher Education majors may take a major course or LT elective.

Upon successful completion of the requirements for this program as listed below, the degree of **Associate in Arts in Liberal Arts Transfer** will be awarded.

ARTS AND TECHNOLOGY — VISUAL ARTS OPTION

The Visual Arts option in the Arts and Technology program is designed primarily for students who plan to transfer and complete a bachelor of arts degree. This option balances up-to-date technical knowledge and skill with the development of a cultural and aesthetic context which is necessary for the meaningful and sensitive use of technology in the visual arts.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
LA 140	Art History: Prehistoric to Gothic	3		3
LE 100	English Composition 1	3		3
MM 132	Technical Mathematics 1	4		4
MP 255	Photographic Science	2	3	3
NP 100	General Psychology	3		3
TA 115	Computing in the Arts	3	3	3
		<hr/> 18	<hr/> 6	<hr/> 19

SEMESTER 2

GA 420	Color Reproduction Processes	2	3	3
LA 146	Introduction to Art: Basic Design	3		3
LA 240	Art History: Renaissance and Baroque	3		3
LE 200	English Composition 2: Intro. to Literature	3		3
MP 119	Technical Physics (or)			
MP 130	College Physics 1	3	3	4
TA 215	Arts and Technology Seminar	2	4	3
		<hr/> 16	<hr/> 10	<hr/> 19

LIBERAL ARTS TRANSFER

SEMESTER 3

LA 147	Basic Drawing	3		3
LA 360	Experimental Computer Imaging 1	3	2	4
TA 315	Collaboration in the Arts	2	4	3
	Elective: Lab Science	3	3	4
		<hr/> 11	<hr/> 9	<hr/> 14

SEMESTER 4

LA 143	Printmaking 1	3		3
LA 460	Experimental Computer Imaging 2	3	3	4
TA 415	Arts Practicum	2	6	4
	Elective: Social Science	3		3
	Elective: Social Science	3		3
		<hr/> 14	<hr/> 9	<hr/> 17

BD 300 Microcomputer Applications, although not required for graduation, is strongly recommended as an elective in Semester 3.

Upon successful completion of the requirements for this program, the degree of **Associate in Arts in Liberal Arts Transfer** will be awarded.

ARTS AND TECHNOLOGY — DRAMATIC ARTS OPTION

The Dramatic Arts option in the Arts and Technology program is designed primarily for students who plan to transfer and complete a bachelor of arts degree. Combining courses in speech and live theater with video technique, this option balances up-to-date technology with traditional liberal arts study to establish an environment conducive to dramatic creativity.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
GT 120	Video Techniques	2	3	3
GT 130	Video Production	2	3	3
LE 100	English Composition 1	3		3
LE 203	Fundamentals of Speech	3		3
MM 132	Technical Mathematics 1	4		4
TA 115	Computing in the Arts	3	3	3
		<hr/> 17	<hr/> 9	<hr/> 19

SEMESTER 2

GT 220	TV Producing and Directing	2	3	3
LA 146	Introduction to Art: Basic Design	3		3
LE 200	English Composition 2: Intro. to Literature	3		3
MP 119	Technical Physics (or)			
MP 130	College Physics 1	3	3	4
NP 100	General Psychology	3		3
TA 215	Arts and Technology Seminar	2	4	3
		<hr/> 16	<hr/> 10	<hr/> 19

LIBERAL ARTS TRANSFER

SEMESTER 3

ET 130	Circuit Theory 1	3	3	4
LE 312	College Theater Workshop 3	3		3
TA 315	Collaboration in the Arts	2	4	3
	Elective: Lab Science	3	3	4
		<hr/> 11	<hr/> 10	<hr/> 14

SEMESTER 4

LA 240	Art History: Renaissance and Baroque	3		3
LE 361	Introduction to the Theater	3		3
TA 415	Arts Practicum	2	6	4
	Elective: Social Science	3		3
	Elective: Social Science	3		3
		<hr/> 14	<hr/> 6	<hr/> 16

Other courses that are strongly recommended but which are not required for graduation: Semester 3 - LA 140 Art History; Semester 4 - BD 300 Microcomputer Applications

Upon the successful completion of the requirements for this program, the degree of **Associate in Arts in Liberal Arts Transfer** will be awarded.

ARTS AND TECHNOLOGY — MUSICAL ARTS OPTION

The Musical Arts option in the Arts and Technology program is designed primarily for students who plan to transfer and complete a bachelor of arts degree. This option balances study in the humanistic tradition with up-to-date technical knowledge. From Mozart to MIDI, students develop a cultural and aesthetic context as a basis for the sensitive use of technology in music.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
ET 130	Circuit Theory 1	3	3	4
LE 100	English Composition 1	3		3
LM 133	Introduction to Piano	3		3
MM 312	Technical Mathematics 1	4		4
TA 115	Computing in the Arts	3	3	3
		<hr/> 16	<hr/> 6	<hr/> 17

SEMESTER 2

ET 325	Digital Systems	3	3	4
LA 240	Art History: Renaissance and Baroque	3		3
LE 200	English Composition 2: Intro. to Literature	3		3
MP 119	Technical Physics	3	3	4
TA 215	Arts and Technology Seminar	2	4	3
		<hr/> 14	<hr/> 10	<hr/> 17

LIBERAL ARTS TRANSFER

SEMESTER 3

LM 233	Intermediate Piano	2		2
NP 100	General Psychology	3		3
TA 315	Collaboration in the Arts	2	4	3
TA 320	Electronic Music 1	3	3	4
	Elective: Lab Science	3	3	4
		<hr/> 13	<hr/> 10	<hr/> 16

SEMESTER 4

LM 130	Music Appreciation 1	3		3
TA 415	Arts Practicum	2	6	4
TA 470	Music Production Techniques	3	3	4
	Elective: Social Science	3		3
	Elective: Social Science	3		3
		<hr/> 14	<hr/> 9	<hr/> 17

Other courses that are strongly recommended but which are not required for graduation: Semester 1 - LA 140 Art History; Semester 2 - MM 132 Technical Math 1; and Semester 4 - BD 300 Microcomputer Applications.

Upon successful completion of the requirements for this program, the degree of **Associate in Arts in Liberal Arts Transfer** will be awarded.

Descriptions of courses offered by this department begin on page 183.

Course Descriptions



Accounting (See Business Administration)

Anthropology (See Sociology/Anthropology)

Arts and Technology

TA 115 — COMPUTING IN THE ARTS

3 credits

This beginning computer course is for people who want to use the computer creatively in the fine arts. Three principal modes of producing computer images: bit-mapped graphics, object-oriented graphics, and image scanning, are introduced. Students use procedure-based programming to generate visual images, list processing for linguistic experimentation, and desktop publishing to explore layout and composition. Sound-generation techniques are introduced. This is a lab/studio course taught on a network of Macintosh computers. PREREQUISITE: None

TA 121 — INTRODUCTION TO M.I.D.I.

1 credit

This course introduces the capabilities of the Musical Instrument Digital Interface (MIDI). This is the universal hardware/software protocol for the networking of modern electronic musical equipment. Special attention will be given to the use of personal computers in electronic music systems. (5 weeks) PREREQUISITE: None

TA 122 — INTRODUCTION TO SEQUENCING

1 credit

Students will learn to use personal computers to create musical compositions. After a brief introduction to Mac and IBM-compatible computer systems, students will investigate the capabilities of software musical sequences with attention to handling MIDI files, creating and editing song files, and computer/keyboard interfacing problems. (5 weeks) PREREQUISITE: LM 133 or permission of instructor

TA 123 — INTERMEDIATE SEQUENCING

1 credit

A continuation of TA 122, this course will give additional exposure to modern software-based sequencers. Fundamental multi-track recording techniques will also be presented. Students will make a demo tape of their compositions by combining the power of a sequencer's "virtual track" ability with the physical tracks of a four-track recorder. (5 weeks) PREREQUISITE: LM 102

TA 215 — ARTS AND TECHNOLOGY SEMINAR

3 credits

Individual student projects will be the focus of this seminar. Fundamentals of multimedia presentation will be taught, stressing use of the computer as a presentation tool. Designing in their chosen medium, students will formally present their work to classmates. Self-confidence and self-reliance are stressed. PREREQUISITES: LE 100, TA 115

TA 315 — COLLABORATION IN THE ARTS

3 credits

In this course students explore arts resources, establish connections with other artists, and develop collaborative projects. Student teams collectively compose works which may draw from more than one artistic discipline. In addition to creating cooperatively in traditional ways, students will share concepts, images, and sounds over a local computer network and work with others worldwide over the Internet. Connections and group dynamics are emphasized. PREREQUISITES: MM 132, TA 215

ARTS AND TECHNOLOGY

TA 320 — ELECTRONIC MUSIC 1

4 credits

In this lab/studio course students learn to assemble and record music as computer documents. MIDI programming and applications are emphasized, including music synthesis techniques, sequencing, and synchronization standards. Multi-track recording techniques are introduced. **PREREQUISITES:** MM 232, LM 233, and ET 235 or permission of instructor

TA 415 — ARTS PRACTICUM

4 credits

Students will share their expertise with the community. They will work with arts organizations and civic groups to produce self-defining and promotional art for those groups. A project might be a booklet, posters, a video, dramatic or musical performance, neighborhood landscaping, or architectural restoration. Projects will be defined and approved jointly by faculty, student, and community group. **PREREQUISITES:** Psychology or Sociology, TA 315, BD 300 or BD 301

TA 420 — ELECTRONIC MUSIC 2

4 credits

An extension of Electronic Music 1, this course includes additional electronics for musicians, history and aesthetics of electronic music, and intermediate multi-track recording. **PREREQUISITE:** TA 320

TA 470 — MUSIC PRODUCTION TECHNIQUES

4 credits

This course emphasizes the equipment and techniques necessary for modern music production. Topics include advanced multi-track techniques, musical scoring and composition, as well as signal processing techniques such as: compression, expansion, delay, reverberation, and noise reduction. Vocal, acoustic, electronic, and sampled music lines will be used to assemble musical compositions. **PREREQUISITE:** TA 320

Automotive Technology

IA 110 — GAS ENGINE SYSTEMS

3 credits

This course deals with the pre-delivery service and maintenance aspects of vehicle preparation, including headlight aiming, wind and water leaks, and maintenance schedules, which include cooling, lubrication, oil filtration, belts, hoses, batteries, spark plugs, engine compression, fuel pumps, and exhaust systems. Laboratory exercises check, test, and service these systems.

Offered Fall Semester

IA 120 — DRIVELINE AND AIR CONDITIONING

3 credits

The driveline component includes the function, construction, operation, servicing, and trouble-shooting of automotive clutch assemblies. Also included is a study of the types of drive-lines differentials, universal joints, RWD, FWD, and 4-wheel drive vehicles. The air conditioning component involves the study of basic automotive air conditioning systems, including principles of refrigeration, testing, and servicing climate control systems, as well as automatic temperature controls.

Offered Summer Session

IA 130 — INTRODUCTION TO AUTOMOTIVE SERVICE

2 credits

This course introduces the student to the automotive industry, including dealer operations, service and parts department procedures, typical pay structures, shop safety, service publications, basic vehicle overview, hand and power tool usage, and automotive measuring devices and systems.

Offered Fall Semester

IA 210 — GASOLINE ENGINES SERVICE

3 credits

This is a study of the principles of the 4-stroke engine, involving construction, operation, identification of engine systems, trouble-shooting, overhaul techniques. Cylinder head and valve train diagnosis is explored, as is engine noise analysis. The lab portion of this course will encompass disassembly and reassembly of complete engines; repair and overhaul procedures, inspection, repair, and measurement of all components.

Offered Spring Semester

IA 220 — AUTOMATIC TRANSMISSIONS

3 credits

This course studies the operation, servicing, and repair of the modern automotive transmission for both front- and rear-wheel drive automobiles. Included are fluid couplings, hydraulic controls torque converters, seals and adjustments. Students participate in disassembly, overhaul, and reassembly of selected transmissions, and adjustment procedures used in repairing these power train units.

Offered Fall Semester

IA 310 — FUEL AND ELECTRIC SYSTEMS

3 credits

The fuel system of the modern automobile is studied, including the theory, operation, and repair procedures for gasoline-equipped vehicles. Specifically, the course covers carburetion principles, fuel/air ratio requirements, fuel pumps, electronic fuel injection, turbocharging, exhaust sensors, and emissions testing. Also, the fundamentals of automotive electrical circuitry is studied, including alternators and starting systems.

Offered Spring Semester

IA 330 — BRAKES AND SUSPENSIONS

3 credits

This course is a study of basic hydraulics, wheel and master cylinders, calipers, disc and anti-lock brakes, power units, and system bleeding. Instruction in machining drums and discs is given, using modern service equipment. Also included is the study of steering geometry, linkages, suspension systems, and alignment service.

Offered Fall Semester

IA 335 — AUTOMOTIVE SCHEMATIC READING

1 credit

This course provides the student with the skills to recognize schematic symbols, and their use and function in automotive schematic drawings. Students also learn to interpret these diagrams for the information and repair of automotive electrical and electronic systems.

Offered Spring Semester

IA 420 — ENGINE DIAGNOSIS AND TUNE-UP

3 credits

This course covers the theory of operation and testing of all components in the conventional and electronic ignition systems. A study of engine tune-up, exhaust emission devices, and diagnosis using modern test instruments, scopes, and infra-red exhaust analyzers is made. Students participate in bench work and actual service problems, using the latest electronic devices. Environmental rules and regulations and their effect on the automotive industry will also be discussed. **PREREQUISITE** IA 110.

Offered Fall Semester

IA 430 — ADVANCED AUTOMOTIVE SYSTEMS

3 credits

This course focuses on the most up-to-date systems used in today's automobiles. Emphasis is placed on the servicing and diagnosis of such systems as electronic ignition, electronic fuel ignition, turbo-charged power plants, and computer-controlled emission devices. Proper trouble-shooting techniques are emphasized and practiced as students participate in lab assignments. **PREREQUISITES:** IA 310 and ET 345.

Offered Spring Semester

AUTOMOTIVE TECHNOLOGY

IA 432 — APPLIED AUTOMOTIVE ELECTRONICS

3 credits

Advanced topics such as electronic engine control strategies, automotive microcomputer systems, speed control systems, and electronic instrumentation (message center/tripminder, instrument cluster, fuel computer, and keyless entry) will be studied in detail. Emphasis on diagnosis and servicing these systems will be stressed. PREREQUISITE: ET 345 and IA 310.

Offered Spring Semester

Biological Sciences

MB 089 — MATH/SCIENCE WORKSHOP

3 credits

The Math/Science Workshop is designed to develop the student's ability to integrate scientific methodology with mathematical processes. Gathering of scientific data, experimentation procedures, laboratory techniques, and the applied mathematical background necessary to perform the laboratory procedures are stressed. By permission.

Offered Summer Session Only

MB 090 — BASIC BIOLOGICAL SCIENCE

4 credits

An Interdisciplinary, entry-level course in biology. The traditional 5 skills of the scientific method are reinforced in both reading and lab-based science areas. The basic and integrated process skills employed by scientists are developed to prepare the student for college-level science experiences. NO PREREQUISITES.

Offered Fall and Spring Semesters

MB 100 — NATURAL HISTORY

4 credits

This course is designed to provide a basic background in botany, zoology and ecology. Field studies and laboratory experiences are designed to help potential pre-school teachers develop programs for their classes. Three hours of lecture and two hours of laboratory, including Independent Field Study.

Offered Spring Semester

MB 102 — PRINCIPLES OF BIOLOGY 1

4 credits

Principles of Biology is an introductory course designed to meet the needs of the student who has no background in chemistry or biology. Principles of Biology 1 is the first of a two-semester presentation of the basic concepts of life science for the transfer student who does not wish to major in science, and for the health career program candidates for whom biology is a prerequisite. The first semester provides an introduction to fundamental biological concepts including: the modern concept of life, the structure and function of cells, biochemistry, cell reproduction, patterns of inheritance, and modern cell theory. PREREQUISITES: MB 090, MM 073 or MM 078 (or placement above), and LD 099 (or placement in LE 100 or above).

Offered Fall and Spring Semester

MB 104 — HUMAN BIOLOGY 1

4 credits

This biology course, required for the Medical Assistant and Medical Office Administration programs but open to all students, provides a basic knowledge of the structure and function of the human body. The course integrates the study of anatomy and physiology with basic chemistry and microbiology, studying normal systematic functions and diseases related to malfunctioning of these systems. Units studied include chemistry, cellular tissues, microbiology, skeletal system, muscle system, and nervous system, accompanied by related laboratory procedures. NO PREREQUISITE.

Offered Fall Semester

MB 106 — GENERAL BIOLOGY 1

4 credits

Geared to the prospective science major, the first semester of this course provides an introduction to the methods of science followed by a discussion of the molecular basis of biology and the architecture of cells and tissues. Consideration is then given to the central energy pathways—cellular respiration and photosynthesis. An in-depth coverage of cellular reproduction, classical and molecular genetics follows. The semester concludes with a study of the origins and diversity of life. **PREREQUISITE:** High School chemistry and biology or permission of the instructor. Honors component available.

Offered Fall Semester

MB 108 — GENERAL BOTANY

4 credits

A one semester, non-majors course which does not require prior courses in biology, chemistry, or mathematics. In addition to providing an overview of the basic concepts of plant morphology and physiology, a survey is made of the major plant groups.

Offered Spring Semester

MB 109 — BIOLOGY OF MAN

3 credits

This course is designed to meet the needs of the student who has no background in biological science. Basic biological concepts are presented with emphasis on the human body. This is a one-semester course, restricted to Spanish speaking students, for those who require 3 credit hours in a non-laboratory science.

Offered Fall Semester

MB 113 — MAN AND HIS ENVIRONMENT

4 credits

Man and His Environment is a four credit lab course designed to meet the needs of the non-science major. Presupposing no background in science, it focuses on man's interdependence with nature. The first half of the course emphasizes major principles of ecosystems while the second half deals with the entire spectrum of environmental problems affecting man and the possible solutions to them. **PREREQUISITES:** None.

Contingent upon enrollment of 12 or more students

MB 121 — MICROBIOLOGY

4 credits

A basic study of microorganisms, their structure, growth processes, and control. The concepts of infection, immunity and hypersensitivity precede the survey of the microbiology of major infectious diseases are included. The course meets for three hours of lecture and three hours of laboratory per week. **PREREQUISITES:** High School Chemistry and Biology.

Offered Fall and Spring Semester

MB 122 — ENVIRONMENTAL MICROBIOLOGY

4 credits

A general investigation of the structure, growth and physiology of microorganisms and macroinvertebrates. Particular attention is paid to the roles these organisms play in the environment. The course meets for three hours of lecture and three hours of lab each week. **PREREQUISITES:** MB 102 Principles of Biology and MC 101 General Chemistry.

Offered Fall Semester

MB 127 — FUNCTION AND STRUCTURE OF HUMAN SYSTEMS

3 credits

This course will present an overview of human anatomy and physiology as well as an introduction to microbiology. Normal structure and function of the selected systems will be discussed as well as the diseases and abnormalities associated with those systems. Microbial structure, transmission of microbial infections, and immunology will be discussed. The principal objective is to offer the student a better appreciation of the human body and its integrative functions. **NO PREREQUISITE.**

Offered Fall Semester

BIOLOGICAL SCIENCES

MB 132 — ANATOMY & PHYSIOLOGY 1

4 credits

A comprehensive study of the structure and function of the human body, emphasizing the normal which will serve as a background for the application of scientific principles both in everyday life and in the work of various health disciplines. Laboratory practice includes the study of tissues by using microscopic examinations and the dissection of animal specimens, along with physiological experimentation. Units covered are concerned with general introductory material, the skeleton, muscles and the nervous system. **PREREQUISITES:** Biology and Chemistry.

Offered Fall Semester

MB 133 — ANATOMY & PHYSIOLOGY/CLS

4 credits

A series of lectures and laboratory experiences designed to provide students with a general understanding of the structure of the human body with emphasis placed on major physiological principles. Three lecture hours and one three-hour laboratory. **PREREQUISITES:** High school biology and chemistry.

Offered Fall Semester

MB 136 — APPLIED PHYSIOLOGY

4 credits

This course takes various concepts in human physiology and by a lecture-laboratory approach the physiological principles are explained and illustrated by laboratory experience and clinically oriented tests. The instrumentation and methodology used in studying physiology and making clinical evaluation are emphasized. Aspects of the cardiovascular, respiratory, excretory, immune and nervous systems are investigated in this course. **PREREQUISITE:** Biology.

Offered Spring Semester

MB 138 — HUMAN ANATOMY 1

4 credits

This is a course requiring no prior biological background. The organization of the human body from the cellular level to the various organ systems is included. Consideration of the pathological process in the human is integrated into the discussion of each organ system. This course combines lectures and appropriate demonstrations of physiological function. The first semester will include a consideration of cells and tissue and an emphasis on the regulatory systems of the body with particular emphasis on the nervous system. Laboratory skills are stressed.

Offered Fall Semester

MB 140 — BIOCHEMISTRY FOR HEALTH SCIENCES

3 credits

An introduction to biochemical principles. Emphasis is on the major metabolic pathways, the mechanisms of enzyme action, bioenergetics and the role of hormones and other regulatory substances. **PREREQUISITES:** General Biology, or Anatomy & Physiology, General Chemistry or permission of the instructor.

Offered Fall and Spring Semesters

MB 142 — INTRODUCTORY NUTRITION

3 credits

Application of nutrition principles in the planning, selection and preparation of foods to meet one's physical, social and economic needs. Discussion of current issues such as vegetarianism, health foods, fad diets, weight control, food additives/preservatives, nutrition labeling, stretching the food dollar, and safe food handling will be presented. **PREREQUISITES:** None.

Offered Spring Semester

MB 143 — FUNDAMENTALS OF ANATOMY & PHYSIOLOGY I 3 credits

This course outlines the organization of the human body from the single cell to the coordinated whole, with emphasis on the interaction of all body systems. Special attention is paid to clinical and pathological conditions, and an extensive vocabulary of medical terminology will be incorporated. RESTRICTED TO COURT REPORTING AND OFFICE ADMINISTRATION.

Offered Fall Semester

MB 146 — ESSENTIALS OF HUMAN BIOLOGY I 3 credits

This course, restricted to students enrolled in the Cosmetology program, will present an overview of human anatomy and physiology with an introduction to microbiology. Interaction of all body systems is discussed with emphasis on those topics relating to Cosmetology. Specific topics included are cell structure, tissues, and the skeletal, muscular, and nervous systems. NO PREREQUISITES.

Offered Fall Semester

MB 148 — BASICS OF ANATOMY AND PHYSIOLOGY 4 credits

This one-semester course combines a series of lectures and laboratory work designed to provide a student with a basic understanding of the structure and function of the human body. It is designed to meet the needs of students with no background in chemistry or biology but who wish to gain a general knowledge in this area. Basic chemistry, cell and tissue structure, and all body systems will be studied. Three lecture hours and one three-hour laboratory. PREREQUISITE: None

MB 151 — INTRODUCTION TO BIOTECHNOLOGY 1 credit

This course will provide an introduction to the field of biotechnology. Included will be laboratory methods for the development of basic skills in handling microorganisms and other cells. Lectures will be supplemented by class visits to local biotechnology facilities. PREREQUISITE: MB 106

Offered Spring Semester

MB 202 — PRINCIPLES OF BIOLOGY 2 4 credits

This course is a continuation of Principles of Biology 1 in which the following topics will be discussed: the diversity of life, its changes through time, and the interrelationships among life forms within ecosystems. Comparative studies of organ and system development within the five kingdoms are integrated into discussion of these concepts. This is a transferable course for non-science majors. PREREQUISITE: MB 102 Principles of Biology 1.

Offered Fall and Spring Semesters

MB 204 — HUMAN BIOLOGY 2 4 credits

As a continuation of Human Biology 1, this course includes units in the endocrine, circulatory, digestive, respiratory, urinary and reproductive systems. Laboratory procedures stressed in hematology, cardiovascular system, and urinalysis accompanied by dissection of appropriate animal specimens and microscopic studies. PREREQUISITE: MB 104.

Offered Spring Semester

MB 206 — GENERAL BIOLOGY 2 4 credits

A continuation of General Biology 1 in which the general morphology and physiology of representatives from all the major kingdoms are discussed. Considerable attention is given to the study of the vascular plant body and vertebrate systems. The final topics covered include evolution, animal behavior, and ecology. PREREQUISITE: MB 106. Honors component available.

Offered Spring Semester

BIOLOGICAL SCIENCES

MB 209 — BIOLOGY OF MAN 2

3 credits

This second semester is a continuation of MB 109. Certain concepts covered in the first semester are expanded in order to gain an understanding of the human body and man's interaction with his environment, while others are examined on a molecular level to comprehend the cellular approach to modern biology. This course will benefit those students going into the health fields, especially those taking Anatomy & Physiology or Human Biology in the future. Topics include: biochemistry, human anatomy and physiology, reproduction and development, modern genetics, modern evolution, and ecology. **PREREQUISITE:** MB 109.

Offered Spring Semester

MB 232 — ANATOMY & PHYSIOLOGY 2

4 credits

A continuation of Anatomy & Physiology 1 concentrating on circulatory, respiratory, digestive, urinary, endocrine, and reproductive systems. Laboratory sessions are included. Emphasis is placed on association, correlation, critical thinking and overview of the body as a whole. **PREREQUISITE:** Anatomy & Physiology 1 (MB 132).

Offered Spring Semester

MB 238 — HUMAN ANATOMY 2

4 credits

The second semester is a continuation of MB 138 and will include a consideration of the cardiovascular, respiratory, digestive, urinary and reproductive systems. **PREREQUISITE:** Human Anatomy 1 (MB 138).

Offered Spring Semester

MB 243 — FUNDAMENTALS OF ANATOMY & PHYSIOLOGY 2

3 credits

This is a continuation of MB 143, **RESTRICTED TO COURT REPORTING & OFFICE ADMIN.**

Offered Spring Semester

MB 246 — ESSENTIALS OF HUMAN BIOLOGY 2

3 credits

This course is a continuation of MB 146. Emphasis is placed on biochemistry, and the cardio vascular, respiratory, digestive, urinary, and reproductive systems. **PREREQUISITE:** MB 146.

Offered Spring Semester

MB 251 — BIOTECHNOLOGY

4 credits

An introduction to the structure, function, regulation, and biosynthesis of molecules, organelles, cells, and organisms. The laboratory will correlate the various metabolic pathways with the cells and organelles of biological systems. **PREREQUISITES:** MB 106, MB 206, MC 103, MC 203.

Offered Spring Semester

MB 310 — INVERTEBRATE ZOOLOGY

4 credits

Invertebrate zoology is designed to acquaint the student with the enormous diversity of animals without backbones. The course includes an examination of representatives of the various phyla. Emphasis will be placed upon classification, structure and function, life cycles, relationship among the groups, and impact of invertebrates on the environment. Three class hours, three lab hours. **PREREQUISITES:** MB 106, MB 206 or permission of instructor.

Offered Fall Semester in alternating years.

MB 320 — HISTOLOGY

4 credits

A study of the microscopic anatomy of cells, tissues, and organs as related to function. Emphasis is on mammalian systems. Discussion of microtechnique, electrophotomicroscopy, and tissue culturing will be introduced. **PREREQUISITES:** Biology (MB 106, MB 206); or Anatomy & Physiology (MB 132, MB 232); or Human Biology (MB 104, MB 204); or permission of instructor.

Contingent upon enrollment of 12 or more students

MB 340 — SECTIONAL ANATOMY

3 credits

An examination of human topical and sectional anatomy in order to enable the student to identify the structures seen in each place and to relate any portion of the anatomy to the body as a whole. Emphasis will be placed on anatomy correlation to medical imaging. PREREQUISITES: MB 132, MB 232.

Offered Spring Semester

MB 350 — EMBRYOLOGY

4 credits

This course will expose the student to the fundamental growth processes and mechanisms that govern normal growth and development in the starfish, frog, chick, and pig embryos. Emphasis will be placed on the development of major organs and organ systems and how these systems develop into normal adult structures. Laboratory experiments, models and slides will be used to reinforce the basic principle of normal development and thus provide a basis for the discussion of abnormal development. PREREQUISITES: Biology (MB 106, MB 206); or Biology (MB 102, MB 202); or Anatomy & Physiology (MB 132, MB 232), or permission of instructor.

Contingent upon enrollment of 12 or more students

MB 351 — CELL BIOLOGY

4 credits

An introduction to the study of the structure, function, and life history of cells and their components. The laboratory will illustrate and analyze, using current technology, mechanisms by which cells reproduce, develop, and interact. PREREQUISITES: MB 106, MB 206, MC 103, MC 203

Offered Fall Semester

MB 360 — GENETICS

4 credits

An introduction to the principles of classical and molecular genetics. Mendel's contributions, gene mapping, the function of genetic material, and gene transfer are highlighted. Laboratory experiments are designed to demonstrate the major principles discussed in lecture. PREREQUISITES: General Biology and General Chemistry. Honors component available.

Contingent upon enrollment of 12 or more students

MB 410 — BIOLOGICAL LITERATURE: AN ANALYSIS AND INTERPRETATION

1 credit

This course is designed to introduce the student to the methods of finding, evaluating, and using research literature in the biological sciences. In addition to familiarizing the student with the use of library and recommended procedures for conducting bibliographic searches, group discussions will focus on scientific methodology, data analysis, and the systematic evaluation of research papers. Independent written and oral presentation of an assigned topic will be required. PREREQUISITES: MB 106 and MB 206, or MB 132 and MB 232, or permission of instructor. Honors component available.

Offered Spring Semester

MB 900 — DIRECTED STUDY IN THE BIOLOGICAL SCIENCES

variable credit

Semester hour credit will vary from one to four, depending upon the written, agreed-upon, approved, student/professor contract. PREREQUISITE: Permission of instructor.

Biomedical Instrumentation Technology

EB 120 — MEASURING PRINCIPLES 1

3 credits

Transducers used for temperature, pressure and flow measurements are discussed along with related concepts in physics. Effort is concentrated on such topics as sensitivity, resolution, recordability, linearity and accuracy, with reference to the above transducers. Although not a prerequisite, knowledge of the algebra of linear equations, exponential functions, as well as elementary trigonometry will be helpful.

Offered Fall Semester

EB 230 — MEASURING PRINCIPLES 2

3 credits

This course is an extension of EB 120, Measuring Principles 1, where the interest is shifted to acoustical, optical, and radiological devices.

Offered Spring Semester

EB 310 — BIOMED SYSTEMS 1

3 credits

This course provides an introduction to medical equipment. Major emphasis is placed on understanding the operation and application of medical instrumentation used in hospitals.

Offered Fall Semester

EB 340 — DIGITAL ELECTRONICS LAB

2 credits

This course is a continuation of the laboratory sequence. Digital components such as AND, OR, and NOR gates will be studied. Additional investigations will include the study of flip-flops drivers, counters, and displays, PREREQUISITES: ET 110, ET 220.

Offered Fall Semester

EB 350 — DIGITAL ELECTRONICS

3 credits

An introductory course to Digital Electronics Concepts and Components. Topics include number systems, Boolean algebra, gates, combinational logic, flip-flops, counters, registers and memories. Logic families such as TTL, CMOS, and ECL will be studied with regard to propagation speed, power consumption, and frequency response.

Offered Fall Semester

EB 410 — BIOMED SYSTEMS 2

3 credits

This course, a continuation of EB 310, provides the time and opportunity for students to work on instruments, observing their design, fabrication, assembly testing, and test figures. The student is expected to cultivate the art of recognizing a correctly operating instrument and an incorrectly operating unit. The training of his/her judgment to access and repair or replace a defective component is crucial to performance on the job. PREREQUISITE: Senior standing in Biomedical Instrumentation Technology. Restricted to Biomed students.

Offered Spring Semester

EB 420 — INSTRUMENTATION PROJECT

2 credits

The student is to apply his developed theoretical and practical knowledge into the production of a project meeting course requirements. The student must select and develop an original project of his own choosing with complete paper and physical documentation as required by the project advisor. PREREQUISITE: Senior Standing.

Offered Spring Semester

EB 430 — CODES, LAWS AND SAFETY

1 credit

The student is required to become aware of enforcing agencies and their software. He must know the intent and purpose of those standards. In addition, he must understand how to be in compliance with regulations. PREREQUISITE: Senior Standing.

Offered Spring Semester

EB 440 — INTEGRATED CIRCUITS

3 credits

Students will be introduced to the operational amplifier and other linear integrated circuits. Topics will include both positive and negative feedback systems used with the op-amp to produce stability and reduce noise. Timers, comparators, voltage level detectors, signal generators, and filters will be treated.

Offered Fall Semester

EB 450 — CLINICAL INTERNSHIP

2 credits

This course will provide the student with clinical experience at a health care facility, utilizing a dual approach consisting of lecture and a hands-on component for each department under study. The student will rotate through various departments within the hospital such as radiology, ICU, OR, lab, and pulmonary. **PREREQUISITE:** Senior standing in EB.

Offered Spring Semester

Biotechnology (See Biological Sciences) Business Administration ACCOUNTING

BA 098 — ELEMENTARY ACCOUNTING

4 credits

An introductory course designed to present to the student the concepts and principles of accounting. Major emphasis is placed upon recording, classifying, and summarizing of the financial data generated within a service or merchandise sole proprietorship business.

Offered Fall Semester

BA 110 — ACCOUNTING 1

4 credits

An introductory course designed to present to the student the concepts and principles of financial accounting. The fundamental techniques of the basic accounting system and the accounting cycle for service and merchandise concerns are examined. Additionally, topics such as specialized journals, cash controls, accounts and notes receivable, budgets, inventory, current liabilities and payroll are discussed. **PREREQUISITE:** None.

Offered Fall and Spring Semesters

BA 113 — ACCOUNTING/FINANCIAL

4 credits

This course presents a comprehensive exposure to basic accounting theory. The student is introduced to the accounting cycle, preparation of financial statements, accounting for assets, liabilities, and stockholders' equity of a firm. **PREREQUISITE:** None

Offered Fall Semester

BA 210 — ACCOUNTING 2

4 credits

This course is designed to complete the study of financial accounting, and to present some of the basic concepts and principles of managerial accounting. The course will cover the accounting for plant assets, a limited discussion of partnerships, and a thorough coverage of corporations including formation, issuance of stock, dividend, and related topics. Corporate bond issues, investments, the statement of cash flow, and

BUSINESS ADMINISTRATION

statement analysis are other topics discussed in the course. Additionally, managerial topics such as manufacturing cost accounting and budgeting will be examined. PREREQUISITE: BA 110.

Offered Fall and Spring Semesters

BA 213 — ACCOUNTING/MANAGERIAL

4 credits

This course examines the use of accounting data for managerial decision making. The student is exposed to the cash flow statement, financial statement analysis, cost terminology and analysis, cost behavior, cost-volume-profit analysis, budgeting, relevant costing, capital budgeting, and the Just-In-Time manufacturing environment. PREREQUISITE: BA 113

Offered Spring Semester

BA 310 — INTERMEDIATE ACCOUNTING 1

3 credits

This course is designed to provide the student with a comprehensive study of the Generally Accepted Accounting Principles and a thorough knowledge of the conceptual framework used in preparing general purpose financial statements. The nature, importance, recording procedures, and presentation of the following balance sheet items are systematically examined: cash, receivables, inventories, plant property and equipment, and intangible assets. Ethics and the need for critical thinking will be interjected throughout the course. Due to the complexity of the subject matter, four class hours are required to present and review the material. PREREQUISITE: BA 210.

Offered Fall and Spring Semesters

BA 311 — COST ACCOUNTING

3 credits

This course provides the student with a study of the concepts, principles, and objectives of cost accounting and cost accounting systems. Discussions will emphasize the job order and process cost accumulation methods utilizing both actual and standard cost systems within a manufacturing environment. Flexible budgets, operating budgets, price and efficiency variances, and cost-volume-profit analysis will be examined in detail. Other topics to be covered include: job costing for services, activity-based accounting, life cycle costing, Just-In-Time purchasing, and pricing for short and long run. PREREQUISITE: BA 210.

Offered Fall Semester

BA 312 — MANAGERIAL ACCOUNTING

3 credits

An introduction to the internal uses of accounting for management planning and control. The point of view will be on the use rather than the construction of accounting data. Areas of study include cost concepts and techniques, cost volume-profit analysis, master budgeting, relevant cost analysis, and capital budgeting. In addition, one hour a week will be spent in a microcomputer laboratory completing managerial problems using Lotus 1-2-3 techniques. PREREQUISITE: BA 210.

Offered Fall Semester

BA 313 — INTRO. TO FEDERAL INCOME TAXES

3 credits

This course presents a comprehensive explanation of the Federal tax code and the accepted practice used in applying tax principles in specific areas as they relate to the preparation of returns involving individuals; Massachusetts income taxes as they affect individuals are also reviewed. PREREQUISITE: BA 210.

Offered Spring Semester

BA 314 — SMALL BUSINESS PLANNING AND CONTROL

3 credits

This course covers the techniques of accounting and financial analysis applicable to the following topics: credit and collection, cash budgeting, cash flow projections, and relevant cost analysis. In addition, the student will learn to evaluate different sources and costs of obtaining capital. **PREREQUISITE:** BA 110 or BA 111.

Offered Fall Semester

BA 410 — INTERMEDIATE ACCOUNTING 2

3 credits

This course continues the study of Generally Accepted Accounting Principles and the conceptual framework used in presenting balance sheet items initiated in Intermediate Accounting 1. The nature, importance, recording procedures and presentation of the following balance sheet accounts are examined: current liabilities, long-term liabilities, investments, contributed capital and retained earning, pension, leases, and income taxes. Additionally, earnings per share and the preparation of the statement of cash flows will be examined. The need for critical thinking and ethics in accounting work will be interjected throughout the course. Due to the complexities of this course, four classroom hours are required to present and review the material. **PREREQUISITE:** BA 310.

Offered Fall and Spring Semesters

BA 417 — GOVERNMENTAL AND FUND ACCOUNTING

3 credits

Specialized area of accounting developed in answer to the specialized needs of non-profit organizations. Covers principles of fund accounting as applied to governmental institutions and hospitals. Particular emphasis on accounting for municipal governments. **PREREQUISITE:** BA 210.

Offered based on student demand

BA 418 — AUDITING

3 credits

A study of the philosophy, objectives, and working procedures involved in the auditing process. The course is designed to familiarize the student with the professional ethics, generally accepted auditing standards, auditing procedures, auditor's legal liabilities, and the rendering of an audit report. The course will also focus on the examination of the financial statements, development of audit programs, generally accepted auditing procedures, review of internal control systems, and internal audit procedures. The significance of audit results to various interested parties will also be examined. Critical thinking and analysis of individuals' ethical development will be stressed. **PREREQUISITE:** BA 410.

Offered Periodically

BP 101 — OFFICE ACCOUNTING 1

3 credits

An introductory course covering the basic structure, concepts and principles of accounting. Emphasis is placed upon the daily record keeping, classification and summarization of the financial information which flows within a service and merchandising sole proprietorship. The accounting cycle including statement presentation is examined along with such areas as cash, receivables, payables, payroll and taxes. A practice set is assigned and completion of it required. (This course is restricted to the office administration, or technology students.) Transfer students should be taking BA 110.

Offered Fall and Spring Semesters

BP 106 — MEDICAL ASSISTANT RECORDKEEPING

1 credit

This course is designed to introduce the medical assistant to the basics of medical office recordkeeping. A brief survey of the methods and procedures of billing, banking, and bookkeeping will be presented.

Offered Spring Semester

Courses will be offered subject to sufficient enrollment.

FINANCE

BF 110 — INTRODUCTION TO FINANCE

3 credits

This course is designed to acquaint the student with the manner in which the financial system functions and with the techniques used to reach financial decisions. Major topics to be studied include the nature of money and financial institutions, central banking, securities markets, managing and financing of organizational assets. Special emphasis is given to financial decision-making.

Offered Fall and Spring Semesters

BF 310 — MONEY AND BANKING

3 credits

The changing nature and functions of money are studied in considerable detail. The role of the banking system as a creator of money and credit is analyzed. The course includes an extensive study of non-bank financial intermediaries. A macroeconomic model is developed within which the relative efficiency of monetary and fiscal policy is examined. **PREREQUISITE:** BF 110.

Offered Fall Semester

BF 313 — PERSONAL FINANCIAL PLANNING

3 credits

This course is designed to provide the student with an analysis of the various components making up the financial plan. From this basis, the various products available are examined in depth. These include the various types of insurance including life, accident and health, property, liability and disability income. Annuities are also included within this section. In addition, various investments available are discussed. These include savings, stocks, bonds, mutual funds, tax-sheltered investments and commodities. Interwoven throughout these discussions is the potential impact these investments have on an individual's federal income tax. The last major areas to be investigated are those of estate analysis and retirement planning. Alternative ways of handling these areas are presented and discussed.

Offered based on student demand

BF 410 — INVESTMENTS

3 credits

This is a beginning course in investment management with special emphasis on the principles governing individual and institutional investment programs. Topics covered include the mechanics of investment, investment media, securities analysis and portfolio management. **PREREQUISITE:** BF 110.

Offered Spring Semester

BF 411 — MANAGERIAL FINANCE

3 credits

The principal focus of Managerial Finance is on decisions and actions that are undertaken in light of the firm's objectives. Certain key concepts and commonly used tools of financial analysis are developed. Included are such topics as ratio analysis, sources and the use of funds analysis and financial control techniques. This material provides a useful overview of finance, and the ideas and terminology developed here facilitate an understanding of all the other parts of the course. Topics to be covered include decisions involving working capital, long-term assets, sources and forms of long-term financing, financial structure and leverage and cost of capital calculations. **PREREQUISITES:** BF 110, BA 210.

Offered Spring Semester

Courses will be offered subject to sufficient enrollment.

BUSINESS LAW

BB 110 — INTRODUCTION TO THE LAW

3 credits

This course is designed to briefly introduce people to their general rights and responsibilities under the law. Included are the basics of how the legal system functions and how the law applies to individuals. Cases and hypotheticals will be used to highlight various areas of the law, including those dealing with the family, housing, criminal, contracts, and employment as well as others of current interest. This course is for non-business majors.

BB 310 — BUSINESS LAW 1

3 credits

The primary purpose of a course in business law is to develop an understanding of the legal framework of business—the basic principles of law that apply to business transactions. Since the students of the course are not seeking training as lawyers, preventive law becomes an important objective. Emphasis is spent on contracts, agency, and employment. **PREREQUISITE:** LE 100.

Offered Fall and Spring Semesters

BB 311 — BASIC LEGAL CONCEPTS

1 credit

The course content is designed to acquaint medical personnel with various legal aspects germane to their profession, and with applying these principles to medical situations.

Offered Fall and Spring Semesters

BB 410 — BUSINESS LAW 2

3 credits

The purpose outlined in Business Law 1 is continued with emphasis upon personal property; bailments; the law of sales; commercial paper such as promissory notes, drafts and checks; real property arrangements such as landlord and tenant, and leases; wills and intestacy. **PREREQUISITE:** BB 310.

Offered Fall and Spring Semesters

BB 412 — SMALL BUSINESS LAW AND INSURANCE

3 credits

This course is designed to familiarize the small business owner or his other professional staff with legal rights and responsibilities. Included is a realistic approach to the laws that affect your business, including the code and government regulations. In addition, we will explore the various forms of legal organization. Lastly, basic knowledge in insurance and tax liabilities is pursued.

Offered Fall Semester

BB 413 — REAL ESTATE LAW

3 credits

This course aims to acquaint the participant with the legal processes and instruments involved in real estate transactions; it does not attempt to supplant the services of the attorney. Included are titles, easements, deeds, contracts, agreements of sale, mortgages, foreclosures and redemptions, liens, wills and probate, tenant and landlord relations, leases and conveyancing. Public aspects of real estate business, such as construction and zoning laws, taxes and insurance are considered.

Offered based on student demand

BP 312 — MEDICAL LAW FOR HEALTH PERSONNEL

3 credits

This course will cover the relationship between the law and society as primarily applicable to the practice of medicine. Discussions will cover the sources and type of law, authority and liability of medical and paramedical personnel and their licensure and registration. Medical ethics, confidentiality, insurance, informed consent and negligence will be considered along with torts, contracts and crimes.

Offered Spring Semester

Courses will be offered subject to sufficient enrollment.

MANAGEMENT

BK 110 — PRINCIPLES OF MANAGEMENT

3 credits

This course provides the student with an introduction to the art and sciences of management. A detailed analysis is made of the planning, organizing, leading, and controlling functions. Particular emphasis is placed upon the decision-making process.

Offered Fall and Spring Semesters

BK 112 — MANAGERIAL SUPERVISION

3 credits

This course examines the unique role of the first level manager and the skills essential to effective performance. Because supervisors deal primarily with immediate subordinates, emphasis is placed on interpersonal skills and relationships, particularly motivation, performance reviews, and conflict management. This course is restricted to non-business majors.

Offered Periodically

BK 113 — INTRODUCTION TO MANAGEMENT

3 credits

This course provides the student with the opportunity to examine the management functions of planning, organizing, leading and controlling within a systems view. Total quality management principles and techniques serve as the integrative framework. Teamwork, decision-making, continuous quality improvement, empowerment, and customer satisfaction are stressed throughout the course. PREREQUISITE: None.

BK 310 — HUMAN RESOURCE MANAGEMENT

3 credits

The primary aim of a course in personnel management is to provide an understanding of the role of the personnel department in the development and administration of the personnel program and the processes relating to it. Areas of study include the basic functions relating to the recruitment, selection, training, motivation, and remuneration of employees. PREREQUISITE: BK 110.

Offered Fall Semester

BK 312 — WOMEN, MANAGEMENT, AND LEADERSHIP

3 credits

This course is designed to prepare women to be effective participants and leaders in organizational settings. Students will examine the "holistic leadership model for women" to develop an understanding of the interactional effects among societal, organizational, and self norms and expectations of our leadership in organizations. Objectives of the course are: 1) to develop an appreciation of the role of cultural differences in our ability to be effective leaders; 2) to increase our understanding of our own leadership styles through the assessment of our attitudes, values, and organization; 3) to develop confidence in our styles of leadership as women, and to develop strategies for the effective application of our styles to organizational settings; and 4) to increase our knowledge of leadership theory as well as to critique the theory in terms of its relevance to women's experience in organizations. PREREQUISITE: BK 110 or BK 112.

Offered Fall and Spring Semesters

BK 410 — LABOR RELATIONS

3 credits

This course is designed to expose the student to the philosophy, activities and objectives of the American labor movement. Areas of analysis include the history of unionism, labor legislation and the search for institutional security. Particular emphasis is given to the nature, content, negotiation, and administration of a collective bargaining agreement. PREREQUISITE: BK 110.

Offered Spring Semester

BK 411 — PRODUCTION MANAGEMENT

3 credits

This is a practical course emphasizing the organization and operation of the production system. Included are capital utilization, work measurement and methods analysis, cost, quality and production control, job evaluation and wage incentive systems. Consideration is given to the quantitative aspects of modern management and their value to the executive. **PREREQUISITE:** BK 110.

Offered Spring Semester

BK 417 — PURCHASING

3 credits

This course is designed to introduce the student to the world of modern purchasing. An overview of purchasing management and organization along with policies and procedures is presented. The basic legal aspects of purchasing, purchasing ethics, sources of supply and value analysis are explored and presented for class discussion. Modern methods of purchasing are reviewed. **PREREQUISITE:** BK 110.

Offered Continuing Education

BK 419 — OFFICE MANAGEMENT AND CONTROL

3 credits

This course exposes the student to the problems of the Office Manager, including the major ideas of what has to be done, how it is going to be done, and who is going to do it. In addition, a study of the control procedures on information and personnel is reviewed. **PREREQUISITE:** BK 110.

Offered Continuing Education

BK 420 — SMALL BUSINESS MANAGEMENT

3 credits

This course is designed to expose the student to the challenges of starting, operating and evaluating the effectiveness of the small business. Topics covered include the various forms of organization, financing, cost structure, location, sources of personnel, marketing and competition. **PREREQUISITES:** BA 210, BK 110.

Offered Spring Semester

BK 421 — SMALL BUSINESS FORMATION

3 credits

This course is designed to expose the non-business student to a practical discussion of the principles and problems of owning and updating a small business. The course will provide a step-by-step, no nonsense, "how to" approach in establishing a new business as well as examining the basic operating problems faced by the small business manager in an ongoing enterprise. The main objective of the course is to help the non-business student avoid some of the pitfalls of starting and operating a small business. **PREREQUISITES:** None (This course is restricted to the non-business student.)

Offered Spring Semester

BK 427 — ORGANIZATIONAL BEHAVIOR

3 credits

This course examines the underlying sources, processes, and consequences of human behavior in organizations. The principles of contemporary behavioral science are used to analyze, understand, predict, and control that behavior. Since organizational behavior is viewed as the result of the interaction of individuals, groups, and of the organization itself, the human element is emphasized in the analysis of organizational design and management. **PREREQUISITES:** BK 110, and NS 100 or NP 100.

Offered Spring Semester

BK 501 — HONORS SEMINAR IN APPLIED MANAGEMENT

3 credits

This is an honors course designed to enhance the ability of individuals to apply a variety of strategies aimed at organizational improvement. The course relies primarily on those concepts and techniques essential to the implementation and maintenance

BUSINESS ADMINISTRATION

of continuous quality improvement programs in contemporary organizations. **PREREQUISITES:** Completion of 30 credits with a minimum QPA of 3.3 and evidence of proficiency in related skill subjects.

Courses will be offered subject to sufficient enrollment.

GENERAL BUSINESS

BP 110 — PRINCIPLES OF REAL ESTATE

3 credits

This course covers the basic laws and principles of Massachusetts Real Estate. It touches upon legal processes and instruments involved in real estate operation, titles, deeds, mortgages, liens contracts and leases. It gives understanding, background and terminology necessary for advanced study in specialized courses. This could well assist those preparing for the license examination.

Offered Continuing Education

BP 111 — PRINCIPLES OF INSURANCE

3 credits

The historical background, and developing and understanding the basic principles of insurance as well as the nature and operation of the insurance business. Emphasis given to the principles which underlie the entire field of insurance. Understanding is developed in the fundamental areas of indemnity, insurable interest, co-insurance, subrogation, proximate cause, other insurance, risk, requisites of insurable risk, deductibles, valued policies, probability and many others. The important functional areas of rating, underwriting, marketing and adjusting are considered as well as the subjects of regulation, reinsurance and company organization. The power and functions of insurance agents and brokers.

Offered Continuing Education

BP 115 — INTRODUCTION TO BUSINESS

3 credits

The purpose of this course is to provide the Business student with a general overview of business. The course is designed to acquaint the student with the basic departmental functions of business, emphasizing the manufacturing, financial, sales/marketing and management information system areas. A further examination will be conducted stressing the interrelationships between these vital operating departments and the contributions that each provides towards the successful operation of the business. Close attention will be paid to the interdependence and competitive spirit, as well as the unique problems facing each segment.

Offered Fall and Spring Semesters

BP 120 — TECHNOLOGY, CULTURE, AND COMMERCE

3 credits

This course will explore technology in an attempt to both understand (in simple terms) various forms of technology, and to explore ways in which technology impacts individuals, cultures, and commerce. The use of multimedia (video/audio/computer presentation/simple animation) will assist in giving an overview of the different kinds of technology and how they are interconnected—and how all of this has interacted to form the highly technical world in which we live. Additionally, there will be a focus on the future of technology, both for humanity in general, and in terms of the business world and of individual career opportunities in the next decade and century.

Offered Fall and Spring Semesters

BP 311 — MEDICAL LAW AND ETHICS

1 credit

The application of law in real-world situations encountered by medical personnel is the focus of this course. Responsibilities and liabilities of health care providers are balanced against the rights and expectations of patients. Traditional ethical questions are explored together with those arising coincident with changing medical practices and public attitudes.

Offered Fall Semester

BP 331 — RESIDENTIAL APPRAISAL

3 credits

This course covers the fundamentals of appraising as applied to residential properties. Included are purposes of appraisals, varying concepts of valuation, acquisition of data used for appraisals covering tables, techniques, special factors and final estimates. Writing of reports and preparation of expert testimony. PREREQUISITE: BP 110.

Offered Continuing Education

BP 332 — COMMERCIAL & INDUSTRIAL APPRAISAL

3 credits

The principles covered in Residential Appraisal are applied to commercial and industrial properties. An analysis of business neighborhoods covering apartment buildings and hotels as well as all types of industrial and manufacturing properties is made. PREREQUISITE: BP 331.

Offered Continuing Education

BP 333 — REAL ESTATE INVESTMENTS & FINANCING

3 credits

Various opportunities and inherent problems in the investment in real estate are reviewed. In addition, the fundamentals of financing real estate are covered. Included are instruments of finance, particular applications to leases, bond issues, mortgage lending and income tax effects as a factor. Competing agencies of federal financing organizations and real estate brokers are reviewed. PREREQUISITES: BP 111, BF 110.

Offered Continuing Education

BP 334 — REAL ESTATE MANAGEMENT

3 credits

This course covers the real estate operator's functions in exchange and speculation in properties, financing and developing, whether he is running his own business or a department in a brokerage firm. Problems inherent in managing apartments and cooperative apartments are reviewed. PREREQUISITE: BP 110.

Offered Continuing Education

BP 341 — SMALL BUSINESS PERSONNEL MANAGEMENT

3 credits

The central theme of this course is the personnel responsibility and function of the small business manager. Full attention is devoted to the traditional personnel topics and functions, including personnel policies; employee selection; training; labor relations; pay and benefits administration; employment laws; and health and safety.

Offered Fall Semester

BP 342 — SMALL BUSINESS PRACTICUM

3 credits

The student applies knowledge obtained in previous courses to a real business situation. This is done by assigning a small group of students to a new or existing business that is in need of management consultation in the various problematic aspects of the business, including technical assistance in the development of a loan proposal, financial projections, and business planning. This course provides the student with the same valuable experience that Co-op offers the student in other academic disciplines. PREREQUISITE: Should be taken after all other required small business courses.

Offered Spring Semester

BUSINESS ADMINISTRATION

BP 355 — INTERNATIONAL BUSINESS

3 credits

This course will inform the student about the various issues in international business. It will try to demystify international business to provide a meaningful study of multinational management in international companies and the strategic decisions and their implementation in international business transactions. Thus, it will look into the complexities and subtleties involved in managing across national borders. **PREREQUISITE:** BP 115 or BK 110.

BP 450 — INTERNATIONAL MARKETING

3 credits

This course will inform the student about the various issues in international marketing. It looks at the global marketing task through the eyes of the marketing manager. It will discuss global marketing strategies, international channels of distribution, cultural dynamics in world markets, the political and legal environment, export trade mechanics and logistics management. Also studied will be marketing research, pricing and promotion strategies, multinational sales management and sales promotion, and financial requirements for global marketing. This course will deal with issues in competition, changing market structures, ethics and social responsibility, and a concern for the deterioration of the global ecological environment and the transnational's critical responsibility to protect it. It will discuss strategic international alliances which will enable companies to capitalize on opportunities offered by global markets. **PREREQUISITES:** BP 115, BP 110.

Courses will be offered subject to sufficient enrollment.

MARKETING

BI 110 — PRINCIPLES OF MARKETING

3 credits

This course emphasizes a well-rounded basic approach that provides maximum exposure to the role of marketing in today's economy which is a marketing economy—not just for marketers of conventional products and services, but also for government, social institutions and social causes and the professions. To achieve this exposure, an overview is presented of the marketing process including marketing research, consumer behavior, market segmentation, target consumers, product strategy, packaging, branding, pricing and the promotional mix. The course will service two types of students—those who want a knowledge of marketing fundamentals, principles and activities to meet specific personal or professional needs, and those who plan a career in marketing.

Offered Fall and Spring Semesters

BP 112 — SMALL BUSINESS MARKETING

3 credits

The various aspects of the marketing function tailored to the small business organization are presented in this course. The course is designed to teach students pricing and profit policies, sales techniques, sales forecasting, and territorial structuring. In addition, marketing research methodologies and resources will be addressed.

Offered Spring Semester

BI 310 — RETAILING

3 credits

The major goals of the course are to enable the student to become a good retail planner and decision maker and to help focus on change and adaptation to change. The student will be introduced to the technical knowledge necessary for retail management. An overview of retailing is presented, including such vital areas as organizational structure, physical security, consumer behavior, personnel management, marketing research, merchandising, planning promotional activities, store planning and inventory control. **PREREQUISITE:** BI 110.

Offered Fall Semester

BI 311 — ADVERTISING AND PROMOTION

3 credits

This course is designed to teach students advertising's fundamental principles and to familiarize them with its strategic, managerial, creative, and financial elements. The student will be exposed to developing advertising strategy, media strategy and selection, creative strategy and execution, budgeting, and control, utilizing the case study method where feasible. **PREREQUISITE:** BI 110.

Offered Spring Semester

BI 312 — ADVERTISING PRINCIPLES

3 credits

An introductory textbook will be used to cover the field of advertising as completely as possible. The course will not specifically take a business point of view or a marketing point of view, but instead, an advertising point of view. The course will include a variety of disciplines and specialties. Such things as research, media buying, print and broadcast production, sales promotion, product publicity, budgeting, scheduling, and even business presentations will be covered. The main purpose of the course is to introduce the non-business student to the richness and variety of the real world of advertising. (This course is restricted to the non-business student.).

Offered Fall and Spring Semesters

BI 313 — CONSUMERISM

3 credits

The development of an analytical structure within which the underlying issues facing the marketing profession are studied. The pre-purchase, purchase and post-purchase phases of a transaction receive detailed consideration in terms of the legal obligations of the buyer, the seller and the financier. Contemporary consumer concern with advertising, pricing and selling practices is examined along with legal requirements covering product safety, warranties, liability and consumer recourse. **PREREQUISITE:** BI 110.

Offered Continuing Education

BI 410 — CONSUMER BEHAVIOR

3 credits

The aim of this course is to understand why people buy as the foundation for developing concepts for meeting consumer needs through selling, advertising, distribution and related activities. Behavioral considerations affecting consumer purchase decisions are analyzed. These include the personality, motivational, cognitive and attitudinal aspects, along with the social influences which affect consumer interaction with business firms. **PREREQUISITE:** BI 110.

Offered Fall Semester

BI 411 — SALES AND SALES MANAGEMENT

3 credits

This course will introduce the student to the fields of sales and sales management. A comprehensive coverage of the tasks of the sales manager as organizer, administrator, and decision maker will be provided in a systematic manner. The most contemporary concepts in sales management as well as the more traditional practices will be explored by integrating both theory and practice. The sales portion of the course will present the theories, concepts, techniques and processes involved in selling. **PREREQUISITE:** BI 110.

Offered Spring Semester

BI 412 — MERCHANDISING

3 credits

A study of the principles and procedures used in selection, promotion and selling of hard and soft goods merchandise in retail stores to develop an understanding of the major considerations of buying, inventory control, pricing and consumer buying motives. **PREREQUISITE:** BI 310.

Offered Periodically

Courses will be offered subject to sufficient enrollment.

Chemistry

MC 090 — MEASUREMENTS AND CALCULATIONS FOR THE PHYSICAL SCIENCES

3 credits

This course is designed to prepare students to enter a first college level course in physical science (i.e., College Chemistry, College Physics, Technical Physics, Chemistry 101.) The student will learn to read scales, approximate, use the metric system, analyze problems, identify significant figures, and design problem solutions using dimensional analysis. Two hours of lecture and two hours of laboratory per week. **PREREQUISITE:** Math placement of MM 081.

MC 100 — COLLEGE CHEMISTRY

4 credits

A study of the fundamental principles of chemistry in relation to the properties, composition, and structure of matter. Topics include the atom, periodicity, bonding, stoichiometry, gases, and acid/base theory, with an emphasis on problem solving. For non-science majors. Three one-hour lectures per week, one three-hour lab. **PREREQUISITE:** Concurrent Math MM 091-093.

Offered Fall and Spring Semesters

MC 101 — SURVEY OF CHEMISTRY 1

4 credits

A one-year college chemistry course for students majoring in the health sciences. The first semester is a study of the general principles of inorganic chemistry atomic and molecular structure, concentration, dilution, stoichiometry, and descriptive chemistry. For students who do not wish to major in science or engineering. Three one-hour lectures and one three-hour lab per week. **PREREQUISITE:** Concurrent Math MM 091-093.

Offered Fall Semester

MC 103 — GENERAL CHEMISTRY 1

4 credits

Modern theories of chemical reactions; atomic, electronic and molecular structures; states of matter; and chemical bonding are emphasized. Three one-hour lectures and one three-hour lab per week. **PREREQUISITE:** One year of high school physical science and completion of MM 093 or 097.

Offered Fall and Spring Semesters

MC 140 — SEMINARS IN APPLIED CHEMISTRY

1 credit

This course is a series of lectures by invited chemists practicing in non-academic laboratories. Sponsored jointly with the Cooperating Colleges of Greater Springfield.

Offered every other Spring Semester

MC 201 — SURVEY OF CHEMISTRY 2

4 credits

A continuation of Survey of Chemistry 1. A study of the basic concepts of organic and biochemistry. Three one-hour lectures and one three-hour lab per week. **PREREQUISITE:** MC 101.

Offered Spring Semester

MC 203 — GENERAL CHEMISTRY 2

4 credits

A continuation of MC 103. A study of equilibria, solution, kinetics, thermodynamics, acid/base and redox reactions. Three one-hour lectures and one three-hour lab per week. **PREREQUISITE:** Completion of MC 103.

Offered Fall and Spring Semesters

MC 319 — ORGANIC CHEMISTRY 1

3 credits

First semester of a one year organic chemistry course at the university level. This is the same course as MC 320 without the lab. Three one-hour lectures per week. **PREREQUISITE:** MC 203 or permission of instructor.

MC 320 — ORGANIC CHEMISTRY 1

4 credits

A one-year course in organic chemistry at the university level. Reaction, synthesis and mechanism of organic reactions will be studied. This course is designed for transfer students with majors in chemistry, biology, pre-med or pre-dental. Three three-hour lectures per week, one three-hour lab per week. **PREREQUISITE:** Chemistry MC 203 or permission of instructor.

Offered Fall Semester

MC 350 — INSTRUMENTAL ANALYSIS

4 credits

The theory and practice of modern analytical methods utilizing spectroscopic, chromatographic and colorimetric techniques will be stressed. The laboratory will include selected experiments having clinical and industrial relevance. **PREREQUISITES:** General Chemistry MC 203 or MC 201 or permission of instructor.

Offered Fall Semester

MC 355 — INSTRUMENTATION FOR CLINICAL LABORATORY SCIENCE

2 credits

Basic electronics and the principles of modern clinical instrumentation will be introduced. The laboratories will consist of demonstrations and field trips to local hospital laboratories to view the procedures discussed in the lecture. **PREREQUISITES:** MC 101, MC 201.

Offered Fall Semester

MC 370 — INDEPENDENT CHEMISTRY STUDY 1

1, 2, 3, or 4 crs.

Independent study of laboratory project in chemistry under direction of an instructor. **PREREQUISITE:** Permission of Department Chairperson.

Offered Fall and Spring Semesters

MC 419 — ORGANIC CHEMISTRY 2

3 credits

Second semester of a one-year organic chemistry course at the university level. This is a continuance of MC 319. Three one-hour lectures per week.

MC 420 — ORGANIC CHEMISTRY 2

4 credits

A continuation of Organic Chemistry MC 320.

Offered Spring Semester

MC 470 — INDEPENDENT CHEMISTRY STUDY 2

1, 2, 3, or 4 crs.

A continuation of MC 370. **PREREQUISITE:** MC 370 or permission of Department Chairperson.

Offered Fall and Spring Semesters

Civil Engineering Technology

GC 105 — CIVIL ENGINEERING SEMINAR

1 credit

An overview of Civil Engineering Technology is presented by lectures and visiting professionals covering the relationship of architect, engineer, and contractor. Aspects of structures, highways, environmental engineering, surveying, laboratory analysis, and municipal engineering are included. The role of the civil engineering technologist in today's society is presented covering career growth opportunities, ethics, the role of professional societies, necessary skills and background, and continuing education.

Offered Fall Semester

GC 115 — CONSTRUCTION MATERIALS AND METHODS

3 credits

A survey of common materials and methods used in building construction and site preparation is presented. Materials covered include wood, steel, concrete, glass, bituminous, and insulation. Emphasis is placed on their physical properties, use in construction, and construction techniques for completing the project. Methods related to site operations, concrete placement, and productivity of earthwork equipment are included. Three lecture hours. PREREQUISITES: MM 087 and LD 099.

Offered Fall Semester

GC 120 — ARCHITECTURAL DESIGN & SPECIFICATIONS 1

4 credits

An introduction to architectural and construction graphic techniques and written specifications. Emphasis is on residential and light commercial structures including site planning, floor plans, elevations, sections, isometrics, mechanical and electrical drawings and specifications, and blueprint readings. Two lecture and six lab hours.

Offered Fall Semester

GC 220 — CONSTRUCTION ESTIMATING

3 credits

An introduction to estimating and construction office practice to familiarize the student with the construction process as a whole; the ways in which contractors organize their offices to accomplish jobs in construction; the generation of plans and specifications and their use, systems of accounting; and how material quantity "take off" forms the basis for accounting. Two lecture hours and three laboratory hours.

Offered Spring Semester

GC 235 — HYDRAULICS AND HYDROLOGY

3 credits

Concepts of continuity, energy, and hydrostatic pressure are included. Pumping systems are designed. Basic hydrological principles of rainfall, runoff, and infiltration are discussed as part of sizing storm drainage system components. A computerized runoff model is introduced. Wetland identification, protection, and remediation are discussed along with the role of regulatory commissions/agencies. The laboratory is devoted to design and problem solving. Two lecture hours and three laboratory hours. PREREQUISITE: MM 087.

Offered Spring Semester

GC 310 — SURVEYING

4 credits

The theory and practice of construction surveying. Field practice is given in the use of tape, transit, level, theodolite, and electronic distance measuring (EDM) equipment. This is a laboratory-oriented course encompassing baseline, differential, and profile leveling, establishment of contours, traverse closures, stadia, construction stakeout of buildings and pipeline layout. Techniques of preparing working plans and maps from recorded data are developed. Two lecture hours and six laboratory hours. PREREQUISITE: MM 132.

Offered Fall Semester

GC 320 — SOILS & FOUNDATIONS

3 credits

Analysis of subsoil conditions, bearing capacity and settlement analysis, character of natural soil deposits, earth pressure and retaining wall theory, stability of slopes and sub-grades, foundation types and construction methods, and structural design of foundation elements. Three lecture hours. PREREQUISITE: MM 132.

Offered Fall Semester

GC 345 — STATICS AND STRENGTH OF MATERIALS

4 credits

An introduction to stress and force theories as they apply to the equilibrium of rigid bodies and particles. Principles of resultant forces, free body diagrams, tension and compression members, truss analysis, applied forces to beams and columns, shear and bending moment diagrams, frictional forces, and torsion are studied. Additional

topics include stress and strain, mechanical properties of engineering materials, factors of safety, centroids, moments of inertia, and welded and bolted connections. The weekly three-hour lab is devoted to in-depth problem analysis and solutions that expand and demonstrate the practical applications of classroom theories. Three lecture hours and three lab hours each week. **PREREQUISITE:** MM 132.

Offered Fall Semester

GC 410 — REINFORCED CONCRETE ANALYSIS

3 credits

A continuation of the stress and force theories from Statics as they apply to structural design using reinforced concrete. The course includes proportioning and specifying batch constituents, and the design of singly reinforced beams, slabs and foundation systems in accordance with the ACI Code and formwork considerations. Retaining walls are evaluated, and standard ASTM concrete tests are conducted by the students. Transporting, placing, and curing of concrete is discussed. The weekly three-hour laboratory is devoted to design analysis, concrete testing, and preparation of design drawings. Two lecture hours and three laboratory hours. **PREREQUISITE:** GC 345.

Offered Spring Semester

GC 420 — CONSTRUCTION MANAGEMENT

3 credits

A study of specialized business and management topics which are of particular interest to the construction industry. Topics include basic operational patterns, subcontracting procedures, purchasing and expediting, scheduling, change orders, accounting for materials and supplies, field labor methods, critical path method and legal matters. Three lecture hours.

Offered Spring Semester

GC 430 — TRANSPORTATION ENGINEERING

3 credits

Highway design, layout, construction, foundations, and subgrades are discussed. Flexible and rigid pavements are included, and selected topics in airport design are covered. The weekly three-hour laboratory includes design, curve layout, and earthwork computations. Field surveying for baseline profiles, cross sectioning, slope stakes and curve layout is also included in the laboratory. Two lecture hours and three laboratory hours. **PREREQUISITE:** GC 310.

Offered Spring Semester

GC 445 — STRUCTURES

4 credits

A continuation of the stress and force theories from GC 345 Statics is presented as they apply to structural design. The design of structural steel floor, beam, and column systems is studied in depth, utilizing ASIC codes, with particular emphasis placed on shearing, bending, and deflection induced on wood and steel load-carrying members. The weekly three-hour lab is devoted to practical design procedures and analysis of various structural members, especially beams, girders, columns, bearing plates, and connections. Three lecture hours and three lab hours. **PREREQUISITE:** GC 345.

Offered Spring Semester

GC 455 — CIVIL ENGINEERING MATERIALS TESTING

3 credits

Classroom theories in soil mechanics, structures, and concrete are expanded through materials testing experiments. Basic civil engineering soil tests are conducted. Soil and ground water testing techniques related to environmental studies and site remediation are discussed during lectures. Data analysis and presentation techniques are presented. Detailed lab reports are required. Training is provided for the Massachusetts Class A Concrete Field Technician Certification. A trip to an environmental laboratory or construction site is required. Two lecture hours and three lab hours. **PREREQUISITES:** GC 320 and GC 345.

Offered Spring Semester

Clerical Office Assistant
(See Office Administration)

Clinical Laboratory Science

AL 101 — INTRODUCTION TO THE CLINICAL LAB

4 credits

An overview and introduction to laboratory safety and basic skills as used in phlebotomy, urinalysis, hematology, chemistry, serology, immunohematology, and microbiology. Universal precautions and proper procedures in regard to specimen processing will be taught to the student. Laboratory mathematics, quality control, and the proper use of instrumentation will be presented as used in the hospital, physician's office laboratory, and laboratory science area.

Offered Fall Semester

AL 103 — SAFETY AND OSHA GUIDELINES

1 credit

This course introduces the allied health student to medical safety rules and OSHA guidelines. Strict observances to these rules and practices is essential in the medical field. An understanding and implementation of these rules are necessary before beginning work in the clinical laboratory, phlebotomy, and related work areas. This course will make the student aware of the hazards he or she will encounter, how to safely handle biohazardous material, and how to successfully prepare for an inspection. Recommended for all allied health students, and required for Clinical Laboratory Science students.

Offered Fall Semester

AL 211 — MEDICAL MICROBIOLOGY 1

4 credits

Medical Microbiology 1 is an introduction to clinical microbiology laboratory and the routine medically significant organisms. The course will include the principal characteristics and procedures used in clinical microbiology to identify normal flora and medically significant bacteria. The laboratory identification of the organism is based on morphological, cultural, and biochemical characteristics. Additional topics will include safety in the microbiology lab, quality control, and antimicrobial sensitivity testing. PREREQUISITE: Successful completion of AL 101 and AL 103.

Offered Spring Semester

AL 220 — ENVIRONMENTAL SAFETY FOR HEALTH CARE

2 credits

This course is an overview of various aspects of the concepts of safety in the health care environment for the nursing assistant, home health aide, and mental health care provider. Emphasis will be placed on governmental regulations, environmental hazards, OSHA requirements, use of universal precautions, and the handling of biohazardous substances in the workplace for the delivery of quality health care for the patient.

AL 300 — HEMATOLOGY AND COAGULATION

4 credits

The study of blood in health and disease to include genetics, the origin, development and function of human blood cells, and a review of the vasculature and coagulation systems. Normal and abnormal findings will be studied through manual and automated procedures. Specific topics include: CBC and coagulation profile, normal values, quality control, and blood disorders. PREREQUISITE: AL 101, AL 103.

Offered Fall Semester

AL 302 — CLINICAL CHEMISTRY

4 credits

This course is designed to acquaint the student with the theory and function of the clinical chemistry laboratory. Course of study includes analysis of blood and body fluid in routine and emergency testing in the clinical chemistry lab. Testing using manual and automated procedures is stressed as well as preparation of solution, interpretation of procedures, and analyses of results. **PREREQUISITE:** AL 101, AL 103.

*Offered Fall Semester***AL 311 — MEDICAL MICROBIOLOGY 2**

3 credits

Medical Microbiology 2 is a continuation of Medical Microbiology 1. The organisms that will be studied are those that require specialized techniques in collection, and biochemical and serological identification. These pathogens include anaerobic bacteria, specialized gram negative organisms, parasites, viruses, and fungi that are medically significant to man. Case studies relating to these organisms and other medically significant organisms and the diseases they cause will be studied. The use of automation and new technologies for identification will be included. **PREREQUISITE:** Successful completion of AL 211.

*Offered Fall Semester***AL 407 — BASIC LAB PROCEDURES FOR THE MEDICAL ASSISTANT**

3 credits

This course is designed to provide the medical assistant with the basic clinical laboratory skills required to work in a physician's office. Skills include: phlebotomy, quality control, urinalysis and the basics of hematology, chemistry, serology, and microbiology. Universal precautions, laboratory safety, and proper procedures regarding specimen processing will be taught.

*Offered Fall Semester***AL 409 — LABORATORY SKILLS IN NUCLEAR MEDICINE**

1 credit

Instruction in basic laboratory skills, including safety/biohazard precautions, pipetting and spectrophotometric techniques. Students will perform in-vitro labeling assays as RIA/EIA using monoclonal antibodies in test procedures. Specimen collection, labeling, handling, processing, testing, and use of universal precautions will be reviewed as well as quality control procedures used in immunoassays.

*Offered Spring Semester***AL 410 — CLINICAL IMMUNOLOGY/IMMUNOHEMATOLOGY**

4 credits

A study of the nature of the immune system. Topics include the nature of immunity, antigens, antibodies, and immune response. Serological procedures will be presented, and their diagnostic significance emphasized. Red blood cell immunology as it relates to ABO/Rh typing procedures, compatibility testing, and antibody detection and identification will be presented, and the clinical significance of these techniques will be identified. Blood donors, component preparation, and transfusion practices will be reviewed in addition to record keeping and quality control procedures. **PREREQUISITE:** AL 101, AL 300 or permission of instructor.

*Offered Spring Semester***AL 420 — CLINICAL PRACTICUM 1**

1 credit

Supervised clinical experience is obtained in an affiliated laboratory under the supervision of a qualified medical technologist and pathologist. The rotation schedule provides experience in the following departments: Immunohematology, Chemistry, Hematology, Microbiology, Immunology, and Urinalysis. **PREREQUISITES:** Successful completion of core curriculum with a minimum passing grade of "C", (75) in all Department courses, and a minimum QPA of 2.0.

Offered Intersession

CLINICAL LABORATORY SCIENCE

AL 421 — CLINICAL PRACTICUM 2

6 credits

Continuation of AL 420.

Offered Spring Semester

AL 422 — CLINICAL PRACTICUM 3

3 credits

A continued practicum for students who have had prior work experience in the clinical laboratory and who can demonstrate achievement of planned competencies in AL 420/421 within this time frame. Approval of the Department Chairperson/CLS Medical Director is a prerequisite for registering for this course.

Offered Summer Session

Computer-Aided Drafting and Design (See Mechanical Engineering Technology)

Computer-Aided Manufacturing (See Mechanical Engineering Technology)

Computer Information Systems/Data Processing

BD 101 — COMPUTER CONCEPTS

4 credits

This course provides the student with an understanding of computers and the roles they play in today's information society. Topics include computer processors, input and output devices, secondary storage, applications software, operating systems, program development, and the development and importance of business information systems. The student will gain hands-on experience using an integrated software package incorporating common productivity tools. **PREREQUISITE:** None.

Offered Fall and Spring Semesters

BD 102 — RPG

4 credits

The RPG programming language is a highly flexible problem-solving language that provides programming solutions to a wide variety of data processing problems. RPG is the language of choice in many small- to medium-sized business computer installations. Students will write, enter, compile, and execute programs using STCC IBM AS/400 computer. Chapter 1 through Chapter 7 of the text, along with selected programming assignments will be covered. **PREREQUISITE:** None.

Offered Fall Semester

BD 105 — PASCAL

4 credits

Pascal is a programming language specifically designed as a teaching tool to enable students to learn the fundamentals of structured programming. Students will be expected to design, code, debug, test, and document Pascal programs, beginning with short and simple applications and continuing with those of increasing complexity. **PREREQUISITE:** None.

Offered Fall Semester

BD 107 — BASIC

4 credits

This course is designed to teach the proper and correct ways to design and write programs in the BASIC Computer Language. Emphasis will be on using only the three logic control structures found in structured programming: the sequence logic structure, the if-then-else logic structure, and the looping logic structure. The concepts

COMPUTER INFORMATION SYSTEMS/DATA PROCESSING

taught in the course include basic input/output operations, basic arithmetic operations, accumulating and printing totals, comparing, array processing, searching and sorting. In addition, string/file processing and report generation. PREREQUISITE: None.

Offered Fall Semester

BD 192 — COMPUTER CONCEPTS FOR ALLIED HEALTH 2 credits

This course is designed to provide students with a fundamental understanding of the role of computers with an emphasis on medical and health applications. Using these applications, students will be introduced to common productivity tools such as data base, spreadsheets, and word processing. Students will also be exposed to the fundamentals of programming in BASIC. This course meets weekly for one lecture period and one lab period. PREREQUISITE: None.

Offered Fall and Spring Semesters

BD 193 — COMPUTER CONCEPTS FOR HUMAN SERVICES 2 credits

This course will cover the operation and use of microcomputers, with emphasis on the ways computers can be used in the Human Services field. Students will gain experience using disk operating systems, word processing, spreadsheets, and data base applications. This course meets weekly for one lecture period and one lab period. PREREQUISITE: None

BD 195 — COMPUTER CONCEPTS FOR TECHNOLOGIES 3 credits

This course introduces the student to computer systems with emphasis on the micro-computer. The variety, uses and purpose of computer hardware is included in this course. The student will also be exposed to the terminology encountered in computerized environments and will receive hands-on experience with computer software. PREREQUISITE: None.

BD 196 — COMPUTER CONCEPTS FOR THE ARTS AND SCIENCES 3 credits

This course is designed for the student in a liberal arts program. Topics covered will include a fundamental understanding of computer hardware (input, output, processing, and storage), and software (systems, applications, and productivity); a practical study of common productivity software (word processing, spreadsheet, data base and graphics); and an understanding of the implications and effects of computers in our social order. PREREQUISITE: LE 100 concurrent or completed, or permission of instructor.

Offered Spring Semester

BD 202 — ADVANCED RPG 4 credits

This course is a continuation of BD 102. Chapter 8 through 14 of the text will be completed. Interactive processing, screen format design, and screen design aid will be utilized by the students to complete assigned programming problems. Random record retrieval using keyed files (ISAM), indexed file updating, and RPG structured programming is a partial list of topics to be included in the curriculum. Programming assignments will be compiled and executed on the STCC IBM AS/400 computer. PREREQUISITE: BD 102.

Offered Spring Semester

BD 300 — MICROCOMPUTER APPLICATIONS FOR DOS 3 credits

Microcomputers have had a profound impact on the business community. Companies of all sizes have been quick to capitalize on the increase in productivity from employees who are skilled in the use of microcomputers. With an installed base of tens of millions of IBM Personal Computers and compatibles, intense competition among software vendors has spawned software that is both easy to use and extremely powerful.

COMPUTER INFORMATION SYSTEMS/DATA PROCESSING

Foremost among the productivity tools are word processors, spreadsheets, and database management systems. The objective of this course is to make the student proficient in the use of the personal computer. PREREQUISITE: None.

Offered Fall and Spring Semesters

BD 301 — MICROCOMPUTER APPLICATIONS FOR WINDOWS 3 credits

This course is similar to BD 300, but features the Windows operating system instead of DOS. Three Windows applications are taught: Word for Windows (word processor), Excel (spreadsheet), and Microsoft Access (database).

Offered Fall and Spring Semesters

BD 302 — COBOL 1 4 credits

COBOL is a procedural-type language which has, over the past twenty years, been the most popular language for solving business problems. The course emphasizes structured programming techniques with its concentration on program design and program readability. The student will write and test a number of programs using the college computer. PREREQUISITE: BD 102 or BD 105 or BD 107.

Offered Spring Semester

BD 303 — C PROGRAMMING 4 credits

This course will explore the C programming language. There will be a strong emphasis on the use of the C language in writing programs for business applications. Topics to be covered include: data types, variables, statement formats, interactive input and output, character and numeric string manipulation, looping constructs, single and multidimensional arrays, pointer variables, functions, and data files. The principles of good programming style and structure will be stressed. The class will meet for three class hours and two lab hours each week. PREREQUISITE: One of the following programming courses: BD 105 Pascal, BD 107 Basic, or BD 302 Cobol.

Offered Spring Semester

BD 313 — OPERATING SYSTEMS 3 credits

This course introduces the concepts and functions of modern computer operating systems. Emphasis will be placed on those microcomputer operating systems which have full multi-tasking capabilities and/or which provide a graphical user interface. Approximately one-half of the scheduled class time will be spent in a lab environment using the operating systems. PREREQUISITE: None.

Offered Fall Semester

BD 314 — DATABASE SYSTEMS 3 credits

This introductory course will focus on using a database management system to solve business-oriented problems. dBASE and its enhancement products have become a major application development system for the IBM Personal Computer. Topics will include creating and modifying structures, memory variables, sorting, indexing, report and screen generation, and setting relations. PREREQUISITE: BD 300 or BD 301 or permission of instructor.

Offered Spring Semester

BD 315 — ADVANCED SPREADSHEETS 3 credits

The power of spreadsheets will be discussed with emphasis on programmed keystrokes (macros) in Lotus 1-2-3. The data menu will also be examined in detail using the sort, query, table, and fill commands. Additional time will be spent on the various functions which are built into the Lotus 1-2-3 software. Other spreadsheet software will also be compared with Lotus 1-2-3. This course will be built around several projects that will be assigned, and on a final project which the students will complete on their own. PREREQUISITE: BD 300.

Offered Spring Semester

BD 320 — DESKTOP PUBLISHING

3 credits

A comprehensive introduction to a powerful page composition program such as PageMaker. The student will have use of an IBM PS/2 microcomputer system and receive hands-on experience. The course will be heavily project-oriented. The student will be guided into producing increasingly complex publications, thus experiencing a variety of techniques and achieving self-sufficiency. Hardware and software concepts as well as terminology associated with desktop publishing will also be included in this course. PREREQUISITE: Familiarity with any word processor.

Offered Fall and Spring Semesters

BD 322 — ON-LINE COMMUNICATIONS

3 credits

This course will teach the student how to "navigate" networks. Major emphasis will be on the Internet. Students will be encouraged to explore the Internet and share their experiences with other students in the class. Emphasis will be on understanding the tools available (e.g., Gopher, World-Wide Web, and others) to get to and retrieve information.

BD 402 — COBOL 2

4 credits

The objectives of the course are to extend the student's knowledge of the COBOL language, to reinforce the ideals of structured programming, and to learn and adopt good programming standards. The knowledge gained from the COBOL 1 course will be used as the foundation for this course. The student will be introduced to file handling and other advanced techniques commonly used in the commercial data processing field. PREREQUISITE: BD 302.

Offered Fall Semester

BD 406 — OBJECT-ORIENTED PROGRAMMING

4 credits

This course will prepare the student for further study in the areas of computer information systems or computer science. Emphasis is placed on data structures and OOP programming concepts. The implementation language will be C++. The student must have a working knowledge of beginning programming concepts, especially those of control structures, data types, scope and use of procedures or functions with parameters. The course will build upon this knowledge. PREREQUISITE: BD 105 or BD 303.

Offered Spring Semester

BD 410 — SYSTEMS ANALYSIS & DESIGN 2

3 credits

The student will develop special business systems including the necessary computer programs. Course flexibility is utilized to meet current demands of the computer industry and its changing techniques. PREREQUISITE: BD 314.

Offered Spring Semester

BD 412 — LOCAL AREA NETWORKS

3 credits

The primary emphasis of this introductory course will be on the NOVELL network operating system. The design, selection, installation, use, and administration of networks will be discussed. The student will gain experience using NetWare on STCC campus networks. PREREQUISITE: BD 313.

Offered Spring Semester

Computer Integrated Manufacturing (See Mechanical Engineering Technology)

Computer Science Transfer Option to Engineering & Science Transfer

MK 103 — INTRODUCTION TO COMPUTER PROGRAMMING

4 credits

This course provides a general understanding of the hardware and software which go into a computer system. Methods of problem solving and algorithm development will be discussed using Pascal. Extensive hands-on computer use that involves program design, coding, entry, and debugging will be required. Topics to be discussed include top-down design, procedures, functions, single-dimensioned array processing, control structures, scope rules, text file processing, and Baukus-Naur syntax specifications for the Pascal language. PREREQUISITE: Computer Science Transfer major or permission of instructor.

MK 203 — THE C PROGRAMMING LANGUAGE

4 credits

This course assumes that the student has taken one semester of computer programming. The programming features of the C language are discussed with enough detail to apply them to solving problems in both computer science and engineering. The advanced topics that will be investigated include: recursive programming, C variable storage techniques, pointer variables, dynamic variables, simple data structures such as multidimensional arrays and linked lists, as well as internal searching and sorting algorithms. Principles of good programming style and structure are heavily stressed. The abstract data concept is introduced early in the course. PREREQUISITE: ME 108 or MK 103 or other computer programming course.

Offered Spring Semester

MK 310 — MACHINE AND ASSEMBLY LANGUAGE

4 credits

A study of data representation, instruction sets, and functional units found in typical computers is presented. The focus of this investigation is on the 8088 microprocessor, the processor used in the IBM PC. Topics to be discussed include: number systems, register configuration, instruction sets, addressing modes, program segmentation, arithmetic operations, data structure operations, floating point (8087) operations, and interrupt processing. Borland's turbo assembler and turbo debugger will be used to code and verify assignments. Macros, assemblers, and linkers will also be discussed. PREREQUISITE: MK 103 or ME 108.

Offered Fall Semester

MK 320 — COMPUTER ORGANIZATION & DIGITAL LOGIC

3 credits

Introduction to the analysis and design of combination and sequential logic using Boolean algebra, Karnaugh Maps, and register transfer techniques. Logic design with integrated circuits. Flip-flops, registers, memory, and input/output devices are among the devices to be discussed. PREREQUISITES: ME 103/ME 206/MK 103.

MK 401 — DATA STRUCTURES AND ALGORITHMS

4 credits

Analysis of algorithms that manipulate information organized in structures such as lists, trees, and graphs. Simple, circular, multilinked lists. Stacks and queues. Balancing algorithms for tree structures. Advanced search/sort techniques, hashing methods. Data-base management system design using the techniques discussed. PREREQUISITE: MK 203.

Computer Systems Engineering Technology

ED 101 — BASIC COMPUTER MAINTENANCE

3 credits

This is an introductory course for people interested in PC-based computer systems. The objective of the course is to provide an introduction to the fundamental concepts of PC use in business and industry. The course starts with an overview of basic PC operating systems and moves into hardware, software, and then networking. A large part of each session will be hands-on, covering basics of computer maintenance and repair.

Offered Fall Semester

ED 241 — COMPUTER PROGRAMMING

2 credits

In this course the student will learn the C language. After an introduction to the C environment, the concepts of data and input/output, operators, expressions and statements, and program flow control will be covered. Next, functions, arrays, pointers and structures, unions and bitfields will be studied. Finally, file input and output, and graphics programming will be introduced. The laboratory portion of this course will allow the student an opportunity to construct, run and test C programs on a PC. PREREQUISITE: ET 111 Intro to CAET, or permission of instructor.

Offered Spring Semester

ED 333 — MACHINE AND ASSEMBLY LANGUAGE PROGRAMMING

3 credits

Programming in Intel 8086 series assembly language is taught in this course. Assembly language technique and development methods will be covered in detail. Students will be required to write, debug, and document programs in 8086 assembly language. Larger problems and projects are composed of a combination of C and 8086 assembly languages. Additionally, programming topics in Motorola 68HC11 assembly language will be covered as necessary. Documentation and a methodical software development practice will be stressed. The 68HC11EVB is used in digital labs 1 and 2. Use and understanding of standard program maintenance/development utilities such as search, diffs, make and profiler will be required. PREREQUISITES: Senior standing in ED or permission of instructor.

Offered Fall Semester

ED 340 — OPERATING SYSTEMS

3 credits

This course covers basic operating system theory. Monitors, OS services, file systems, scheduling, memory management, virtual memory. Overview of real-time operating systems (VRTX, MTOS-UX). Effects of Graphical User Interfaces (GUI) such as MS Windows, OS/2, etc. System security, system tuning and configuration. PREREQUISITE: Senior standing in ED or permission of instructor.

Offered Fall Semester

ED 342 — EMBEDDED CONTROLLERS 1

4 credits

This course covers the basics necessary to develop microprocessor-based embedded systems. Embedded systems range from small microcontrollers to arrays of processors. This course primarily uses the PC-AT as a platform. The course covers basic PC-AT construction and configuration, and is a board- and interface-level introduction to the PC-AT. Students will study PC-AT configuration, connectors, signal levels, and device addresses, as well as basic communications such as RS232 (serial interface), RS422/RS485, Centronics (printer/parallel port), file and data transfer programs, EPROM programming, modem basics, and BIOS programming. An overview of common microprocessor and microcontroller architectures is included. Lab experiments

COMPUTER SYSTEMS ENGINEERING TECHNOLOGY

are used to provide practical experience. This course may be used by any electronics student as an advanced PC-AT architecture and configuration course. **PREREQUISITE:** Senior standing in ED or permission of the instructor.

Offered Fall Semester

ED 343 — LINEAR CIRCUITS

4 credits

This course presents material about the theory and operation of discrete solid state devices such as diodes and transistors. Biasing techniques and practical applications are emphasized. The next portion of the course covers the operational amplifier. Use of the Op-Amp as a building block type of circuit is covered in detail. The laboratory portion of the course allows the student to gain practical hands-on experience in the construction and troubleshooting of typical active circuits such as amplifiers and oscillators using linear integrated circuits. **PREREQUISITES:** ET 130 and ET 230 or ET 110, 115, 210 and 215.

ED 420 — MICROPROCESSOR THEORY

3 credits

This course covers microprocessor hardware and software, and the theoretical and practical aspects of interface design. The processor, memory, and input/output devices are covered. Architectural features of current microprocessors and microcontrollers (Pentium to 8088, 68040 to 68000) and microcontrollers (68HC11, 8051, 8052) are examined. Peripheral circuitry, peripheral programming techniques, and special purpose peripheral ICs are covered, as well as memory types, decoder circuits, and memory hierarchy. Honors component available.

Offered Spring Semester

ED 440 — MICROPROCESSOR INTERFACING

4 credits

This course deals with the hardware necessary to build microprocessor-based systems from basic building block components. Both theoretical and practical aspects of interfacing processor, memory, and input/output devices are discussed. Topics include grounding, shielding and system construction, interrupt circuitry, memory interfacing, direct memory access, bus systems, and interface components. The laboratory portion of the course will allow the student to gain practical hands-on experience with the programming, interfacing and application of the microprocessor/microcomputer to real world systems. **PREREQUISITE:** Senior standing in ED or permission of instructor.

Offered Spring Semester

ED 442 — EMBEDDED CONTROLLERS 2

4 credits

This course is a continuation of ED 342, Embedded Controllers 1. The course stresses the software/hardware integration of various sensors, actuators, and devices with a computer system. Topics covered include A/D D/A converters, digital and analog outputs, digital ready sensors, and general sensor theory. Devices covered usually include magnetic/optical card readers, OPTO-22 style high voltage/high current input/output units, stepper motor drives, liquid crystal displays (LCD), battery powered monitors, communication with X10 wireless automation, infrared remote communications and control, text to speech digital voice synthesizers, and bar code readers. Specialized event-driven and interrupt programming techniques for control and monitoring are covered. Programming for all projects is in assembler (Motorola 6811/80286 and 80386 PC-AT) and C lab experiments are used to provide practical experience. A design project is required. **PREREQUISITE:** ED 342 Embedded Controllers 1 or permission of instructor.

Offered Spring Semester

ED 444 — COMPUTER NETWORKING

3 credits

This course will introduce the student to the concepts of computer networking. Coverage will include the telephone system, modem theory, the OSI networking model and its various physical layers—Ethernet, Arcnet, and Token Ring. The second half of the

course will present material about typical present-day network operating systems such as Novell, OSI and Arpanet. **PREREQUISITE:** Senior standing in ED or permission of instructor.

Offered Spring Semester

ED 451 — COMPUTER PERIPHERALS

3 credits

Computer peripherals are studied in this course. Coverage includes magnetic and optical storage devices, ESDI and SCSI interfaces, hierarchical storage controllers, input/output devices such as printers and video displays, and computer integration topics using the PC, PC-AT and PS/2s as guides. **PREREQUISITE:** Senior standing in ED or permission of instructor.

Offered Spring Semester

Cosmetology

AC 112 — THE PROFESSIONAL COSMETOLOGIST

2 credits

An orientation to the profession of cosmetology. Topics include rules and regulations of the Massachusetts Board of Cosmetology, careers in cosmetology, professional image, physical presentation, personality development, people skills, effective communication, professional ethics, and application of these concepts in the student salon. **COREQUISITES:** AC 113, AC 114, and MB 146.

Offered Fall Semester

AC 113 — COSMETOLOGY 1

8 credits

The student learns the techniques and procedures of haircutting, scalp treatments, draping, shampooing, finger waving, pin curling and hair styling, together with blow drying and thermal irons. Styling for student competition is incorporated. Product knowledge, and application and theory of permanent waving are studied.

In the laboratory setting, mannequin heads are used for practice work under the direct supervision of a licensed instructor. Occupational safety and sanitation are integrated and practiced. **COREQUISITES:** AC 112, AC 114, and MB 127.

Offered Fall Semester

AC 115 — AESTHETICS 1

2 credits

This course is designed to assist students to develop knowledge and skill in basic techniques and procedures of manicuring, facials, and superfluous hair removal. Occupational safety and sanitation inherent in each procedure are stressed and practiced. **COREQUISITES:** AC 112, AC 113, and MB 146.

Offered Fall Semester

AC 213 — COSMETOLOGY 2

8 credits

This course is a continuation of AC 113. Hair cutting, permanent waving, chemical relaxation, and hair coloring are studied in depth. The artistry of artificial hair and braiding are introduced. A patron salon provides experiences for the students to practice their skills in cosmetology. **PREREQUISITES:** AC 112, AC 113, AC 114 and MB 146.

Offered Spring Semester

AC 214 — AESTHETICS 2

2 credits

A continuation of AC 115 in which the student learns the application of makeup and color concepts. An introduction is given to the electrical currents used in facial massage. Practical experience is gained in the salon where students offer manicures and

COSMETOLOGY

facials under the supervision of a licensed instructor. Occupational safety and sanitation are integrated and practiced. **PREREQUISITES:** AC 112, AC 113, AC 114 and MB 146.

Offered Spring Semester

AC 215 — COSMETOLOGY 3

3 credits

A basic course dealing with the fundamental principles and techniques underlying the managerial process in small business management. Topics include advertising, record keeping, merchandise control, salon practices, telephone techniques, personnel management, and business law. Professionals in the industry are introduced. They provide a realistic approach for the student to the field. Resume writing and portfolio preparation are incorporated. **PREREQUISITES:** AC 112, AC 113, AC 114 and MB 146.

Offered Spring Semester

Court Reporting

BC 070 — MACHINE SHORTHAND SKILL BUILDING 1

3 credits

This course is designed to reinforce the theory and skills developed in Machine Shorthand 1. Machine shorthand tapes will be assigned. This course will meet 20 hours per week. A grade of "C" is required. **PREREQUISITE:** BC 102.

Offered Winter Intersession

BC 090 — MACHINE SHORTHAND SKILL BUILDING 2

3 credits

The course is designed to reinforce the theory and skill developed in Machine Shorthand 4. Machine shorthand tapes will be assigned. The speed goal of 200 WPM on Q&A will be emphasized. This course will meet 20 hours per week. A grade of "C" or better is required. **PREREQUISITE:** BC 404.

Offered Winter Intersession

BC 101 — MACHINE SHORTHAND 1

5 credits

This course will enable the student to gain a mastery of the basic StenEd machine shorthand theory. Emphasis will be placed on stroking technique and vocabulary development through the reading and writing of shorthand. Machine shorthand tapes are used in the development of dictation speed and the reading of notes accurately. Speed requirements are: students must pass two speed tests at 60 WPM on general business correspondence with a minimum of 95% and 97% accuracy. This course meets 8 hours per week. A grade of "C" or better is required. **PREREQUISITES:** 40-50 WPM NET typing, placement in English Composition 1.

Offered Fall Semester

BC 105 — COURT REPORTING EDITING

3 credits

This course is designed to teach students extensive punctuation skills which they will need in their careers as verbatim reporters. The in-depth study of punctuation will be especially useful in dealing with spontaneous oral speech, which is less organized than written speech. This course reviews and reinforces basic grammar rules and emphasizes the basic principles of punctuation style, spelling improvement, capitalization, number and abbreviation styles, proofreading, and editing as they apply to verbatim English found in court transcripts and realtime reporting. Vocabulary development will also be emphasized. Achievement tests will be administered on completion of each area of emphasis. **PREREQUISITE:** LE 100.

Offered Fall or Spring Semester

BC 106 — COMPUTER-ASSISTED MACHINE SHORTHAND 1

1 credit

This course is designed to give students computer-assisted review in StenEd basic machine shorthand theory taught in Machine Shorthand 1. Students will work with computer-assisted StenEd lessons using IBM computers and Xscribe First-CAT steno machines for on-line interaction with computerized lessons. A grade of "C" or better is required. COREQUISITE: BC 101.

*Offered Fall Semester***BC 201 — MACHINE SHORTHAND 2**

5 credits

This course will enable the student to gain a mastery of advanced StenEd machine shorthand theory and to develop shorthand and transcription skill on unfamiliar material. The student will develop the ability to separate phonetically unfamiliar words according to machine shorthand theory and to write these words accurately in shorthand. Students must pass two tests at 80 and 100 WPM on Literary material with a minimum of 95% and 97% accuracy. The course meets 8 hours per week. A grade of "C" or better is required. PREREQUISITE: BC 102 and BC 070 or permission of instructor.

*Offered Spring Semester***BC 206 — COMPUTER-ASSISTED MACHINE SHORTHAND 2**

1 credit

This course continues to give students computer-assisted instruction in StenEd machine shorthand theory taught in Machine Shorthand 2. A grade of "C" or better is required. COREQUISITE: BC 201.

*Offered Spring Semester***BC 301 — COURT REPORTING STENED MEDICAL TERMINOLOGY**

3 credits

This course combines the study of medical terminology with the study of StenEd advanced machine shorthand theory. The combined academic and stenotypic information will prepare students for the high-speed medical dictation given in Medical Dictation and Transcription for Court Reporters, and is indispensable in preparing graduates to record expert medical testimony verbatim, conflict-free, using realtime writing technology. A grade of "C" or better is required. PREREQUISITE: A&P 1&2 or AA 101; BC 304; COREQUISITE: BC 404 and BC 314.

*Offered Fall Semester***BC 304 — MACHINE SHORTHAND 3**

6 credits

This course continues student mastery of advanced machine shorthand theory, and development of shorthand and transcription skills on unfamiliar material. The student continues to develop the ability to separate phonetically unfamiliar words according to machine shorthand theory, and to write these words accurately in shorthand. Students must pass two tests at 120 Literary, 140 Jury Charge, and 140 Q&A with 95% and 97% accuracy. The course meets 10 hours per week throughout the summer. A grade of "C" or better is required. PREREQUISITE: BC 202 or permission of the instructor.

*Offered Summer Intersession and some Fall Semesters***BC 305 — COURT REPORTING LEGAL SHORTHAND TERMINOLOGY**

3 credits

This course is designed to give the court reporting student a background in basic legal terminology, including Latin and French terms. The student who successfully completes this course will be able to correctly spell, pronounce, and define the legal terms presented, in addition to developing the ability to take and transcribe this legal terminology at speeds ranging from 120 to 180 WPM using StenEd machine shorthand and realtime computer technology. Students who plan to work as official, freelance, or realtime reporters, realtime transcribers, or scopist/transcriptionists will benefit from

COURT REPORTING

this course. This course meets three class hours per week. A grade of "C" or better is required. PREREQUISITES: BB 310, NL 110, BC 304, BC 310; COREQUISITES: BC 404, BC 314.

Offered Fall Semester

BC 306 — COMPUTER-ASSISTED MACHINE SHORTHAND 3 1 credit

This course continues to give students computer-assisted instruction in StenEd machine shorthand speed development and theory taught in Machine Shorthand 3. A grade of "C" or better is required. COREQUISITE: BC 304.

Offered Summer Session

BC 310 — INTRODUCTION TO REALTIME 1 credit

This course introduces students to the basics of computer-aided translation for the purpose of evaluating realtime computer-compatible writing techniques. This course will prepare students for comprehensive CAT applications courses. A grade of "C" or better is required. COREQUISITE: BC 201 or BC 304.

Offered Spring or Summer Session

BC 314 — COURT REPORTING COMPUTER TRANSCRIPTION APPLICATIONS 1 3 credits

This course presents an overview of computer-assisted transcription as it relates to the court reporting profession. In addition to an introduction to the microcomputer, basic care, maintenance, support services, and computer-aided transcription terminology, students will use StenoCAT translation software and become familiar with dictionary management as well as producing transcripts: reading, translating, editing, using include files and parentheticals and outputting to ASCII, full transcripts, and mini-transcripts with key word indexing. Students will emphasize realtime writing techniques, perform utility functions, and explore litigation support, related software, and the CLVS specialty. Computer-Integrated Courtrooms (CIC) and Computer-Assisted Realtime Translation (CART) will be explored as they are integrated with video captioning and closed captioning in the legal, academic, medical, broadcast, and corporate workplace environments and relate to the Americans with Disabilities Act (ADA). Students must produce a five-page, first-pass transcript with a minimum 95% translation rate. This course meets for three class hours and a minimum of two lab hours per week. A grade of "C" or better is required. PREREQUISITES: BC 310, BC 304; COREQUISITES: BC 315, BC 404.

Offered Fall Semester

BC 315 — COURT REPORTING TRANSCRIPTION AND PROCEDURES 1 3 credits

This course is designed to emphasize the role of the reporter in trials, depositions, and administrative hearings. Preparation of transcripts, marking exhibits, indexing and storing of notes, and reporting techniques will be stressed. The course will consist of lecture, discussion, demonstration, production exercises, videotapes, guest speakers, tests, quizzes, and CAT assignments. Skills developed in Court Reporting Editing and Computer Translation Applications will be applied to final-copy transcripts. Note: No credit will be given unless minimum standards are achieved. A grade of "C" or better is required. PREREQUISITE: BC 304; COREQUISITES: BC 314, BC 404.

Offered Fall Semester

BC 400 — MACHINE SHORTHAND APPLICATIONS 1 3 credits

This course is available to all advanced machine shorthand students. It offers additional speed development and speedbuilding on new material in the following areas: Testimony 160-180; Jury Charge 160-180; and Literary 140-160. Readback ability and shorthand note analysis will be emphasized. Editing skills will be reviewed and tested.

Current events, geography, and vocabulary development will be included. This course meets three hours per week, merges with Shorthand 4, and uses realtime technology. PREREQUISITES: BC 304, BC 310; COREQUISITES: BC 404, BC 314, BC 315.

May be offered Day or Evening

BC 404 — MACHINE SHORTHAND 4

6 credits

This course continues the presentation of advanced shorthand writing, emphasizes speed building, and reviews grammar and punctuation appropriate to transcripts. Students must pass two tests at 140 and 160 Literary, 160 and 180 Jury Charge, and 160 and 180 Q&A with a minimum of 95% and 97% accuracy. The course meets 10 hours per week. A grade of "C" or better is required. PREREQUISITES: BC 304, BC 310, 50 WPM NET typing; COREQUISITES: BC 400, BC 301, BC 305.

Offered Fall Semester and some Spring Semesters

BC 405 — COURT REPORTING MEDICAL DICTATION/TRANSCRIPTION

3 credits

This course will consist of medical dictation for court reporting students, emphasizing question and answer material at varying speeds, medical case histories, essays, and autopsies. This material is generally drawn from specially-prepared medical dictation texts and actual cases. This course will also include the development of a student medical job dictionary that will be used along with the StenEd Master Medical Dictionary to prepare final transcripts of medical assignments for computer translation. A grade of "C" or better is required. PREREQUISITES: BC 404, MB 143&243 or AA 101; BC 301, BC 314; COREQUISITE: BC 501.

Offered Spring Semester

BC 413 — COURT REPORTING TECHNOLOGY/INTERNSHIP

4 credits

This course is designed to familiarize students with the Massachusetts court system, and the transcript format for district and superior courts, as well as reporting techniques using machine shorthand. Students must complete a minimum of 50 verified hours of actual writing time at actual court cases and depositions approved by the instructor, and must satisfactorily complete a minimum of 40 final copy transcript pages from internship testimony. A grade of "C" or better is required. PREREQUISITE: Qualification at 200 WPM Q&A with 97% accuracy; COREQUISITES: BC 501, BC 415.

Offered Spring Semester

BC 414 — COURT REPORTING COMPUTER TRANSCRIPTION APPLICATIONS 2

3 credits

In this course students will learn to apply the skills previously developed to Premier Power translation software. Students will write realtime and perform utility and litigation support functions. CIC and CART will continue to be explored as they are integrated with video captioning and closed captioning in the legal, academic, medical, broadcast, and corporate workplace environments and relate to the Americans with Disabilities Act (ADA). This elective course meets three class hours and a minimum of two lab hours per week. A grade of "C" or better is required. PREREQUISITES: BC 314, BC 404; COREQUISITES: BC 415, BC 501.

Offered Spring Semester

BC 415 — COURT REPORTING TRANSCRIPTION AND PROCEDURES 2

2 credits

This course continues to emphasize the role of the reporter in trials, depositions, and administrative hearings. Skills and knowledge developed in Editing, Computer Translation Applications, and Procedures I will be applied to final-copy transcripts. Three- and four-voice testimony will be dictated while students assume the role of official reporters. Students must produce at least ten (10) salable pages of final-copy transcript from simulated deposition or courtroom settings in two (2) hours or less. Note:

COURT REPORTING

No credit will be given unless minimum standards are achieved. A grade of "C" or better is required. PREREQUISITES: BC 314, BC 404; COREQUISITES: BC 405, BC 501.

Offered Spring Semester

BC 500 — MACHINE SHORTHAND APPLICATIONS 2

3 credits

This course is a continuation of BC 400 and is available to all advanced machine shorthand students. This course offers additional speed development and speedbuilding on new material in the following areas: Testimony 200-240, Jury Charge 200-225, and Literary 180-200. Readback ability and shorthand note analysis will be emphasized. Editing skills will be reviewed and tested. Materials will be more technical and more difficult in order to meet advanced writing requirements. Current events, geography, and vocabulary development will be included. This course meets three hours per week, merges with Shorthand 5, and uses realtime technology. PREREQUISITES: BC 404, BC 414; COREQUISITES: BC 405, BC 415, BC 501.

May be offered Day or Evening

BC 501 — MACHINE SHORTHAND 5

5 credits

This course is a continuation of BC 404, emphasizing speed and accuracy. Students must pass three (3) tests at 180 Literary, 200 Jury Charge, and 200 and 225 Q&A with a minimum of two at 95% and one at 97% for a C; three at 97% for a B; two at 97% and one at 98% for an A-; and two at 97% and one at 99% for an A. Students will be trained under simulated conditions in preparation for the Massachusetts Certified Shorthand Reporters (CSR) examination at 210 Q&A, 190 Jury Charge, and 170 Literary; the National Court Reporters Association Registered Professional Reporters (RPR) examination at 225 Q&A, 200 Jury Charge, and 180 Literary; and the Certified Realtime Reporters (CRR) examination at 180-200 Literary. Included are specialized materials in the areas of legal, technical, and sustained dictation. This course meets 8 hours per week, merges with BC 500, and uses realtime technology. Four to six practice hours per day are required. A grade of "C" or better is required. PREREQUISITES: BC 404, BC 314, 50 WPM net typing on two tests; COREQUISITES: BC 405, BC 413, BC 415, BC 500.

Offered Spring Semester

BC 505 — HONORS MACHINE SHORTHAND

3 credits

This *elective* course is designed for exceptional students who have met NCRA graduation speed requirements of 225 WPM Q&A, 200 WPM Jury Charge, and 180 WPM Literary with 98% accuracy. Honors students will work on high speed tapes in preparation for weekly testing sessions. Speed goals will be Merit speeds: 240-260 Q&A, 220-240 Jury Charge, and 200-220 Literary with 98% accuracy. Students will be required to complete 20 hours of speed practice each week, attend speed applications classes, and meet for testing weekly.

Offered Spring Semester

BC 510 — HONORS CAT APPLICATIONS

1 credit

This *elective* course is designed for students who have met NCRA graduation speed requirements with 98% accuracy and who have an interest in pursuing practical experience in realtime reporting and/or television closed captioning for the hearing impaired. Honors students will arrange for a minimum of 15 hours of participation in both of the above-mentioned applications with specialized area reporters (Springfield, Hartford, Boston). Students will be asked to submit a written report on this practical experience. PREREQUISITE: BC 310, BC 314 and permission.

Offered Spring Semester

BC 600 — MACHINE SHORTHAND APPLICATIONS 3

3 credits

This course is a continuation of BC 500 and will offer continued formal speed development at higher speeds and on more difficult material. Readback ability will continue to be emphasized. Current events, geography, and vocabulary development will be included. This course will meet three hours per week and is often scheduled to merge with RPR Machine Shorthand. Working reporters are allowed to audit this course. **PREREQUISITE:** Must be working at RPR speeds. **COREQUISITE:** BC 605.

*Offered as Needed***BC 605 — RPR MACHINE SHORTHAND**

4 credits

This course is restricted to Court Reporting majors and working reporters who qualify for RPR speed testing. Students will be required to complete six hours of independent machine shorthand practice on a daily basis, and they will be tested regularly at RPR levels. Grades will be based on student ability to pass each segment of the RPR with 97% to 99% accuracy. Working reporters may audit this course. **PREREQUISITE:** Must be working at RPR speeds or higher; 50 WPM net typing; **COREQUISITE:** BC 600.

Offered as Needed

Criminal Justice
(See Law Enforcement/Criminal Justice)

Data Processing
(See Computer Information Systems)

Dental Assistant

AD 100 — DENTAL ASSISTING TECHNIQUES 1

3 credits

This course is primarily designed to educate the student in the proper identification, care and use of all types of dental equipment and instruments. As the student progresses, he/she will have a working knowledge of tray set-ups and instrument sequencing for each dental procedure to enable the student to utilize 4-handed chairside assisting effectively. Aseptic techniques, including an understanding of the principles of microbiology and sterilization are emphasized in this introductory course. In addition, dental terminology and charting procedures will be discussed.

*Offered Fall Semester***AD 102 — ORAL ANATOMY**

2 credits

Study of the anatomy, embryology and histology of oral structures with emphasis on deciduous and permanent dentitions including morphology, eruption, function and occlusions.

*Offered Fall Semester***AD 103 — DENTAL RADIOLOGY 1**

3 credits

This course is primarily designed to afford the student an opportunity to integrate the theoretical as well as the practical application of exposing, processing, mounting and interpreting full-mouth and bite-wing radiographs through the use of the bisecting and paralleling techniques. These goals are achieved through the utilization of simulated exercises and clinical practice which will aid the student in developing radiographic expertise. In addition, panoramic radiography will be discussed.

Offered Fall Semester

DENTAL ASSISTANT

AD 104 — DENTAL MATERIALS 1

4 credits

The chemical, physical and manipulative properties of common materials used in dentistry are studied. Attempt is made to correlate the major specialties in dentistry. The role of the dental auxiliary in the manipulation and application of these materials is stressed.

Offered Fall Semester

AD 105 — DENTAL SCIENCES 1

2 credits

This course is primarily designed to educate the student in all phases of diet, nutrition, and oral health. It is intended to familiarize the student with basic nutritional deficiencies and oral manifestations that the patient may experience as a result of his/her dietary habits. Also covered in the course are the principles of nutritional counseling. As the student progresses, he/she will have a working knowledge of the techniques of counseling patients according to their specific dietary and oral health needs. In addition, the various techniques of oral physiotherapy will be discussed.

Offered Fall Semester

AD 200 — DENTAL ASSISTING TECHNIQUES 2

3 credits

A continuation of first semester, this course seeks to advance the skill and dexterity of the student in all techniques. There is a coordination of activities in an effort to combine efficient chairside performance with general dental assisting tasks. Additionally, this course is designed to enhance the student's awareness of various employment opportunities that will be available upon graduation. To accomplish this goal, the student will pursue an in-depth study of the numerous dental specialties, including periodontics, orthodontics, oral surgery, and endodontics, to name a few. With this knowledge, the student should be able to integrate effectively the theory of dental assisting with the practical application of all procedures. In order to educate the student as to his/her legal responsibilities to the dentist, the patient, and ultimately to the field of dental assisting, the student will also receive lectures on ethics and jurisprudence as they pertain to the practice of dentistry.

Offered Spring Semester

AD 201 — DENTAL SCIENCES 2

3 credits

This course is designed to familiarize the student with the various tissue changes that may occur in the patient's oral cavity as a result of pathological and/or systemic conditions. Also included will be a study of medical emergencies and their respective first-aid treatment procedures. Specific types of pharmacological agents that are utilized in the dental office in order to alleviate pain and fear or enhance anesthesia as well as those agents which are prescribed to the patient to control systemic disease will be discussed. The student will be required to enroll in and pass a Certified Cardiopulmonary Resuscitation course which will be offered in conjunction with this area of study.

Offered Spring Semester

AD 202 — DENTAL RECORDS

2 credits

This course is primarily designed for the dental assistant. Included will be basic business procedures which are essential to the effective management and control of the dental office. Business skills are reviewed and developed for practical application in the office. In addition, procedures in filing, banking, billing, managing the appointment book, organizing a preventive recall system, insurance, tax forms, and all types of financial transactions which might be found in the dental practice will be explored.

Offered Spring Semester

AD 203 — DENTAL RADIOLOGY 2

1 credit

A continuation of the first semester, this laboratory course enables the student to further enhance his/her skills in the techniques of radiographs through the utilization of the bisecting and paralleling techniques. These goals are achieved through the use of simulated exercises and clinical practice on patients which will aid the student in developing radiographic expertise within the dental office.

*Offered Spring Semester***AD 204 — CLINICAL AFFILIATION**

5 credits

Since the College does not have a dental school with which to affiliate, this portion of the student's training is accomplished through the continued interest and cooperation of our area dental society. At this time, the student should be able to expand his/her dental assisting education and to improve his/her chairside skills under the direct supervision of dentists and auxiliary personnel.

Offered Spring Semester

Dental Hygiene

AH 101 — CLINICAL PRACTICE 1

4 credits

Lectures and preclinical laboratory sessions are presented to introduce the etiology and prevention of dental diseases, normal oral conditions and common deviations, theory and practice in specific clinical techniques in the practice of dental hygiene. Students must pass both laboratory and theoretical components of the course in order to continue in the program.

*Offered Fall Semester***AH 103 — ORAL ANATOMY 1**

2 credits

This course is designed to familiarize the dental hygiene student with the anatomical components and functions of the teeth and supporting structures. Soft tissue landmarks of the oral cavity, dental terminology, and occlusion will be studied.

*Offered Fall Semester***AH 104 — DENTAL RADIOLOGY**

3 credits

An introductory course in dental radiology, including theoretical concepts of the characteristics of radiation, the dental x-ray machine, effects of radiation exposure, radiation protection, image receptors and their processing, dental radiographic anatomy, and intra-oral radiographic procedures.

*Offered Fall Semester***AH 200 — NUTRITION**

2 credits

This introductory course is designed to familiarize the dental hygiene student with the basic concepts and principles of nutrition. Emphasis will be placed on those nutrients which will have an overall effect on the oral cavity. Disease entities which may affect the healing response of the oral environment will be covered. Counseling techniques for diet modification will be introduced. **PREREQUISITE:** MB 140.

*Offered Spring Semester***AH 201 — ORAL PATHOLOGY**

2 credits

Introduction to the basic principles of disease pertaining to the head and oral structures will provide the background for recognition of such diseases within the scope of the dental hygienist's practice and responsibility.

*Offered Spring Semester***AH 202 — CLINICAL PRACTICE 2**

5 credits

A continuation of Clinical Practice 1, this course will offer theoretical and clinical application of concepts related to dental hygiene care. Students will be introduced to clinical phases of practice, assessment of the patient's needs, implementation of a multitude

DENTAL HYGIENE

of dental hygiene procedures, and the process of evaluating outcomes of patient treatment. Students must pass the theoretical and clinical components of the course in order to continue in the program. PREREQUISITES: AH 101, AH 103, AH 104.

Offered Spring Semester

AH 203 — ORAL ANATOMY 2

2 credits

A continuation of Oral Anatomy AH 103 with emphasis on the embryology and histology of the maxillofacial area and dental structures. Attention will be given to skeletal structure, muscle function, blood supply, and innervation of the maxillofacial region. PREREQUISITES: AH 103, MB 132.

Offered Spring Semester

AH 300 — PERIODONTOLOGY

2 credits

This course will explore the pathogenesis, diagnosis, and treatment of periodontal disease. Emphasis will be given to the microbiological progression of periodontal disease, host response, diagnostic methods, treatment philosophies, treatment modalities, and the role of the dental hygienist in the treatment and prevention of periodontal disease.

Offered Fall Semester

AH 301 — DENTAL MATERIALS 1

3 credits

This course is designed to familiarize the dental hygiene student with knowledge of the various dental materials placed in and around the oral environment. Focus will be placed on the composition, chemistry, clinical properties, mixing techniques, advantages, disadvantages, and setting times of the more common materials utilized in the dental setting. The role of the dental auxiliary in the manipulation and application of these materials is stressed. Students must pass both the clinical and theoretical components of the course in order to continue in the program.

Offered Fall Semester

AH 302 — PHARMACOLOGY

2 credits

Study of drugs and their effects on living tissues. Emphasis will be placed on the drugs which are utilized in dentistry. Dosage, physical and chemical properties and modes of administration will be considered. PREREQUISITES: MB 140, AH 203.

Offered Fall Semester

AH 303 — CLINICAL PRACTICE 3

6 credits

A course designed to enhance the comprehension of dental hygiene services and to apply basic sciences to the practice of dental hygiene. The students will learn to expand upon their basic skills in areas such as radiographic interpretation, restoration recontouring, recognition and charting of periodontal diseases, patient motivation, and advanced hand instrumentation. The application of the theoretical background to the clinical techniques will enable the student to provide comprehensive patient care. Students must pass both the theoretical and clinical components of the course in order to continue in the program. PREREQUISITE: AH 202.

Offered Fall Semester

AH 400 — COMMUNITY DENTAL HEALTH

3 credits

A series of lectures, discussions, and a field project designed to introduce the student to the diversified oral health needs of various populations. Students propose, plan, and participate in a community dental field service project which is designed to assist an organization with the assessment of the needs of the population, provision of dental health education, and provision of dental care for the participants.

Offered Spring Semester

AH 401 — CLINICAL PRACTICE 4

6 credits

A course designed to provide students with the theoretical background needed to perform advanced clinical procedures to function as a respected member of the oral health team in any dental practice setting, and to utilize higher level thinking to make decisions regarding patient care. Emphasis is placed on periodical therapy for dental hygienists, ethics, and jurisprudence in dentistry, application for employment, third party systems, appointment control and recall systems. Simulation exercises, role playing, reading and research in the field will enable the dental hygiene students to discover their personal ethics and values in dentistry, so that they will be able to handle most situations in the dental environment. Students must pass both clinical and theoretical components of the course in order to continue the program. **PREREQUISITE:** AH 303.

Offered Spring Semester

AH 402 — APPLIED DENTAL AUXILIARY SKILLS

2 credits

This introductory course is designed to provide the dental hygiene student with an overall view of the various duties that may be within the performance realm of the dental hygienist. The course will provide the background information and introduce basic techniques to perform a wide variety of functions. Emphasis will be placed on those duties that are currently accepted within the state practice laws including rubber dam application, placement and removal of periodontal dressings, suture removal, placement of temporary restorations and application of sealants.

Offered Spring Semester

Developmental English (See English)

Diagnostic Medical Sonography

AS 100 — SONOGRAPHIC PHYSICS AND INSTRUMENTATION 1

3 credits

Presents theoretical and practical aspects of ultrasound physics and instrumentation, including characteristics and properties of sound energy and the manner in which ultrasound is used in imaging. The physical principles examined will include wave forms, propagation, velocity, wave length, acoustic impedance, reflection, refraction, other types of interaction with tissue, and biological effects. Considered as a pivotal course in which the student learns to integrate knowledge of physics with instrumentation theory and applications. Understanding the production and actual creation of high quality diagnostic images will be stressed. **PREREQUISITE:** MM 125.

Offered Fall Semester

AS 200 — SONOGRAPHIC PHYSICS 2

3 credits

A continuation of AS 100, Sonographic Physics and Instrumentation 1. **PREREQUISITE:** AS 100.

Offered Spring Semester

AS 201 — SONOGRAPHIC INSTRUMENTATION 2

3 credits

A continuation of AS 100, Sonographic Physics and Instrumentation 1. **PREREQUISITE:** AS 100.

Offered Spring Semester

DIAGNOSTIC MEDICAL SONOGRAPHY

AS 202 — SONOGRAPHIC PROCEDURES 1

2 credits

An introduction to sonographic imaging in abdominal and ob/gyn specialties. Emphasis will be placed on developing a strategy of examination based on recognition of normal and pathologic states, data from other imaging modalities, laboratory findings, patient history, and other information as appropriate. PREREQUISITES: AS 200, AS 201, MB 340.

Offered Summer Session

AS 203 — CLINICAL PRACTICUM 1

2 credits

A clinical practicum designed to orient the student to common procedures in sonography, and to overall operation, policies, and basic patient care in the medical setting. CONCURRENT: AS 202.

Offered Summer Session

AS 205 — INTRODUCTION TO DIAGNOSTIC MEDICAL IMAGING

3 credits

An entry-level exploration of the professional and technological development of radiography, computer tomography, magnetic resonance, nuclear medicine, and diagnostic medical sonography imaging. Methods for image production, current uses, and future trends will be discussed for each of the imaging fields.

Offered Fall Semester

AS 300 — SONOGRAPHIC PROCEDURES 2

3 credits

A continuation of AS 202 Sonographic Procedures 1. PREREQUISITES: AS 202, AS 203.

Offered Fall Semester

AS 301 — CLINICAL PRACTICUM 2

3 credits

Application of classroom and laboratory study to sonographic examination in the specialties of abdomen and ob/gyn. CONCURRENT: AS 300.

Offered Fall Semester

AS 400 — SONOGRAPHIC PROCEDURES 3

3 credits

An in-depth continuation of AS 300 Sonographic Procedures 2, with the addition of vascular examination. There will be an emphasis on recognition of pathologic states and use of a decision-making process. Skills that will contribute to the development of sonography as a profession such as research design, teaching techniques, and health administration will also be presented. PREREQUISITES: AS 300, AS 301.

Offered Spring Semester

AS 401 — CLINICAL PRACTICUM 3

3 credits

Application of classroom and laboratory study to examination in the specialties of abdomen, ob/gyn, and vascular sonography. CONCURRENT: AS 400.

Offered Spring Semester

AS 402 — SONOGRAPHIC PROCEDURES 4

2 credits

A comprehensive review of the specialties of abdomen, ob/gyn, and vascular sonography. PREREQUISITES: AS 400, AS 401.

Offered Summer Session

AS 403 — CLINICAL PRACTICUM 4

2 credits

A comprehensive experience requiring application of all prior theoretical and practical knowledge/skills to the clinical setting. PREREQUISITE: AS 401; CONCURRENT: AS 402.

Offered Summer Session

Drafting Technology (See Mechanical Engineering Technology)

Early Childhood Education

NC 100 — INTRO. TO EARLY CHILDHOOD EDUCATION

3 credits

Provides students the opportunity to develop a realistic view of the teaching profession, and fosters an understanding of the major issues in early education, including the history and philosophy of contrasting early childhood education models; components of quality early learning; design of environments; child observation techniques; basic teaching skills; licensing regulations; and home/school/community relationships. COREQUISITE: LE 100.

Offered Fall Semester

NC 110 — CHILD GROWTH AND DEVELOPMENT

3 credits

Examines the growth and development of young children from conception through early elementary school years in view of the contemporary theories and findings of Erikson, Piaget, and others. Contributions from pediatric, nutritional, social services, and other disciplines are included. A major focus will be ways in which young children construct knowledge about their physical, social, and intellectual worlds. Alternative styles of child rearing in different cultures are integrated into the course. This course meets Office for Children requirements for training under Category A. COREQUISITE: LE 100.

Offered Fall Semester

NC 120 — EARLY CHILDHOOD FIELD WORK 1

1 credit

Provides students with opportunity to develop skills in working with young children and to integrate theories of child development with direct experience in an early learning environment.

Offered Fall Semester

NC 200 — CURRICULUM FOR EARLY CHILDHOOD EDUCATION

4 credits

Provides students with integrated experiences in applied early learning through lecture, discussion, and workshops in creative expression, dramatics, mathematics, science, sensory motor play and music and movement with a focus on young children's need to feel, handle, and manipulate materials as the means of learning about their world. Explores the teacher's role in providing encouragement and stimulation so that children feel free to express their ideas through many media. Special attention is given to the role of play in development. Included are program techniques which foster the development of healthy self concept and methods for mainstreaming in the early childhood setting. Students learn to evaluate young children's thinking and plan curriculum activities appropriate to their current developmental levels. PREREQUISITES: NC 100, NC 110.

Offered Spring Semester

NC 215 — OBSERVING & RECORDING OF CHILD BEHAVIOR SEMINAR

1 credit

Provides the students with the opportunity to increase their objectivity and proficiency in observing and interpreting children's behavior. Class presentations and discussions also focus on content and materials of early learning as part of the environment in which group behaviors occur. Taken simultaneously with NC 220.

EARLY CHILDHOOD EDUCATION

NC 220 — EARLY CHILDHOOD FIELD WORK 2

2 credits

Students spend six hours per week in the role of student classroom aide to provide direct experience with children in a group setting in which they have opportunities to plan and implement learning experiences in the areas they are studying in the curriculum course. PREREQUISITES: NC 100, NC 110.

Offered Spring Semester

NC 250 — YOUNG CHILDREN AND BOOKS

3 credits

This course provides the student with a study of the rich and dazzling world of literature for young children, focusing on picture books where art and literature blend into an aesthetic whole. Course content will include types of books, types of illustrations, techniques of presentation, reviews of children's authors, previews of audiovisual materials based on books, and methods of eliciting children's responses to literature. PREREQUISITES: NC 110, NC 120.

NC 300 — LANGUAGE & READING INSTRUCTION IN EARLY CHILDHOOD

4 credits

This course focuses on literacy, creativity, linguistics, and developmental reading approaches for children from preschool through early elementary school, stresses the interrelatedness of the language arts (reading, writing, listening, speaking), and provides opportunities for students to develop ways of working with young children that emphasize creative expression and critical thinking in communication. Teaching strategies and learning materials that include print-rich environments and emphasize the child as a reader during the emergent, initial, and established stages of reading development will be explored, designed and implemented. Students will develop skills in the areas of planning and presenting lessons, individualizing and sequencing curriculum and instruction, and using appropriate methods, media, and materials. PREREQUISITES: NC 110, NC 200, NC 220, LE 200.

Offered Fall Semester

NC 325 — UNDERSTANDING CHILD BEHAVIOR SEMINAR

2 credits

This course provides students with effective teaching strategies and practical approaches to managing the behavior of young children. Students examine the assumptions and principles underlying the major discipline systems, including positive discipline, behavior modification, logical consequences, and others. It is expected that students will practice the selected techniques in their practica. This course provides a framework for positive classrooms that are supportive of children's self esteem and responsive to diverse individual backgrounds. The importance of teacher's self-awareness will be emphasized. PREREQUISITES: NC 110, NC 200, NC 220. Taken simultaneously with NC 335.

NC 335 — EARLY CHILDHOOD PRACTICUM 1

4 credits

Provides students with extended experiences in two group settings, as strategies for classroom management are explored and refined. Students will practice the selected techniques studied in NC 325. The primary objective is to assist students in cultivating a systematic yet personalized approach to classroom management and individualized behavior planning which emphasizes prevention. PREREQUISITES: NC 110, NC 200, NC 220.

NC 400 — EARLY CHILDHOOD PRACTICUM 2

6 credits

Provides students with opportunities to increase their skills in working with young children and to integrate theories of child development with developmentally appropriate practice in the classroom. Students work under the direction of an experienced teacher as they increasingly assume responsibilities for the management of the classroom and the organization and design of the curriculum. Integrated and sequenced series of learning experiences for a child or for a group of children are planned, implemented, and evaluated by the students. In frequent conferences with their cooperating teachers and college supervisor, students continuously evaluate all aspects of their teaching. **PREREQUISITES:** NC 300, NC 325, NC 335.

*Offered Spring Semester***NC 410 — HEALTH AND SAFETY FOR INFANTS AND CHILDREN**

1 credit

The student will earn Red Cross certificates in Health and Safety for Infants and Children, and Infant and Child CPR. **PREREQUISITE:** NC 110.

NC 425 — EARLY CHILDHOOD PROGRAM PLANNING

3 credits

This course is intended to help students acquire the interpersonal and organizational skills required for leadership in the early childhood field. It includes program issues of health and safety, nutrition, social services, parent involvement, personnel policies, educational programming, assessment and evaluation, budgeting, professional development, and community resources, and focuses on a study of the practical aspects of program operation. It considers various early childhood education models and the respective implications for curriculum planning, together with an emphasis on the mainstreaming concept. A special focus is strategies for communication among adults: staff members, parents, and personnel from other agencies. The role of the teacher and laws affecting school environments will be considered. **PREREQUISITES:** NC 300, NC 325, NC 335.

Offered Spring Semester

Economics

NE 100 — PRINCIPLES OF ECONOMICS 1

3 credits

This course is primarily concerned with macroeconomics and aims at developing an understanding of American economic institutions and the economic problems of inflation, unemployment and economic growth. Emphasis is given to the principal tool of economists, the market model of demand and supply. The effects of both fiscal and monetary policies on the major problems of the economy are thoroughly explored. **PREREQUISITE:** None.

*Offered Fall and Spring Semesters***NE 200 — PRINCIPLES OF ECONOMICS 2**

3 credits

This course is sequential to Principles of Economics 1 NE 100 and is primarily concerned with Microeconomics. Microeconomics deals with the subsystems of the economy such as the economics of the firm and the industry. The major emphasis is on a thorough analysis of supply and demand and of the four market structures. The theories and concepts are then applied to such relevant topics as poverty, ecology, and population growth. **PREREQUISITE:** NE 100.

Offered Fall and Spring Semesters

ECONOMICS

NE 300 — CURRENT ECONOMIC PROBLEMS

3 credits

A course designed to acquaint the student with several of the more important problems of our economy such as economic growth, unemployment, consumer credit, cost of air pollution and population explosion. **PREREQUISITE:** NE 100.

Offered Fall and Spring Semesters

NE 310 — COMPARATIVE ECONOMIC SYSTEMS

3 credits

This course considers an analysis of today's major economic systems such as the American modified market economy, the mixed economics of Western Europe, France, Germany, United Kingdom and the command economies of the Soviet Union and the Peoples Republic of China. **PREREQUISITE:** NE 100.

Offered Spring Semester

NE 320 — DEVELOPMENT ECONOMICS SEMINAR

3 credits

This seminar will survey various economic growth models with focus on the theories and issues of development economics as they apply to the real world economic situations in the Third World. The organizational structures and strategies designed to cope with issues and problems of economic development in the Third World will be analyzed. There will be an in-depth study done on the basis of selected countries in the Third World. **PREREQUISITE:** NE 100 Honors component available.

Offered Spring Semester

Electrical/Robotics Technology

EE 110 — BASIC ELECTRICITY 1

3 credits

Course dealing with the basic theories and concepts essential to the practical understanding of all phases of electricity and electronics. It treats fully the nature of electricity and magnetism, including an exposition of the electron theory as it relates to electricity. Consideration is given to Ohm's Law, and to associated circuits, batteries, included E.M.F., magnetic circuits, DC measuring instruments, motors and generators. **PREREQUISITES:** High school Algebra 1 and 2.

Offered Fall Semester

EE 121 — CAD FOR AUTOMATION

3 credits

Computer Assisted Drafting (CAD) for Automation is directed toward the drafting of industrial electronic circuits, robotic work cells, and flow lines. The student will learn basic CAD skills on the IBM PC and apply these skills to the creation of electronic circuits and automated systems. The proper arrangement of associated equipment, robots, conveyors, and vision systems is fundamental to the trends in industry. This course is also a foundation for other courses in this program.

Offered Fall Semester

EE 140 — BASIC PROGRAMMING FOR MICROCOMPUTERS

3 credits

This is an introductory course requiring no previous knowledge of microcomputers. The course contains two distinct topics: microcomputer fundamentals, and BASIC programming. Microcomputer fundamentals include what is a computer system, its operation, and applications such as word processing. The operation of DOS and Windows 3.1 are also addressed. The programming section will utilize QBASIC and provide applications that will enhance the student's ability to master other programming languages and the related field. This course builds the skills necessary for greater success in subsequent courses.

Offered Fall Semester

EE 210 — BASIC ELECTRICITY 2

3 credits

Understanding of the basic electrical and electronic principles of DC circuits extended to include the more complex area of AC circuits. Generation, vector representation and algebraic manipulation of the sine wave, inductance, capacitance, resonance and Ohm's Law for alternating current circuits are studied. Practical methods of measuring inductance, capacitance and impedance are discussed along with AC and DC bridge circuits. Included are also the rudiments of complex-wave formation and analysis. In the laboratory, the student will perform experiments confirming theory and will be given experience and training in the repair of AC equipment. PREREQUISITES: EE 110, MM 132.

*Offered Spring Semester***EE 241 — FUNDAMENTALS OF MOTOR CONTROL**

3 credits

This is a second semester course, and an understanding of D.C. fundamentals is required. The course covers devices, circuits, materials, motors and generators, controls, and transformers, with the emphasis on controls. Topics to be covered in the controls area are: start stop three wire control, start stop and jog three wire control, and forward and reverse control circuits. The laboratory is a required part of the course, and is a reinforcement of the topics presented in class. PREREQUISITE: Department Chair's approval.

*Offered Spring Semester***EE 320 — INDUSTRIAL ELECTRONIC CIRCUITS 1**

3 credits

This course deals with the fundamental circuits and components most frequently found in industrial electronic equipment. The basic circuit of a complete electronic control system and the characteristics of the component parts of each circuit are studied. Emphasis is placed on the characteristics of solid state devices and sensing elements. The laboratory section of the course is designed to verify by means of experiments the characteristics of the components and circuits used in industrial electronics. It is intended to develop an understanding of those circuit construction practices and testing techniques common to the field. PREREQUISITES: EE 110, 210.

*Offered Fall Semester***EE 340 — FUNDAMENTALS OF ROBOTICS**

3 credits

The purpose of this course is to provide an overview of Robotic Technology. It explores the basic components of a robot system, programming techniques, safety and applications. Other topics include sensor systems, actuators, servos, control systems, and interfacing. The lab will be used to perform realtime exercises in robot operation and control. A research project will involve obtaining robot specifications and creation of a realistic robot application. PREREQUISITES: EE 110, EE 140.

*Offered Spring Semester***EE 350 — PROGRAMMABLE MOTOR CONTROLS**

3 credits

Control systems for electric motors are vital for the proper performance and protection of modern plant equipment. The programmable controller or PC is fast replacing many of the older relaying type logic systems; for this reason, this course deals only with programming of a modern PC. Basic relay type logic is required for this course since the PC will be used as a tool to simulate the older style relaying circuit. The laboratory associated with this course will be necessary for the complete understanding of programming the PC and how PC interfaces with the modern industrial plant control systems. PREREQUISITES: EE 110, EE 210, EF 240.

Offered Fall Semester

ELECTRICAL/ROBOTICS TECHNOLOGY

EE 411 — INDUSTRIAL ELECTRONICS 2

3 credits

The study of the basic uses of operational amplifiers throughout industry begins with the differential amplifier and an overview of fundamental circuit designs. The Op-Amp is studied in the laboratory for its integral role in industrial control feedback systems such as comparators, differentiators, and integrators. PREREQUISITES: EE 110, EE 210.

Offered Spring Semester

EE 440 — SOLID STATE CRT DESIGN

2 credits

The design and application to industrial electro-mechanical systems of electrical circuitry using solid state devices, integrated circuits, memory storage and electronics. PREREQUISITES: EE 110, EE 210, EE 320.

Offered Spring Semester

EE 451 — MICROPROCESSOR APPLICATIONS

3 credits

This course is directed to the application and use of microprocessors in industry, with emphasis on understanding basic operation, interfacing, and programming. Study includes basic architecture, developmental languages, bus structures, interfacing with peripheral devices, memory, input/output devices, and diagnostics. PREREQUISITES: MM 232, EE 210, EE 320.

Offered Spring Semester

EE 480 — ROBOTICS AND AUTOMATED SYSTEMS

3 credits

This course integrates the use of robots with industrial electronics systems and devices. The student is exposed to robotic systems and practical simulated industrial applications typical in American industries. The laboratory sessions emphasize computer control, programming, expert systems, robotic work cells, machining control centers, interfacing, system operation, and troubleshooting. PREREQUISITE: EE 340.

Offered Spring Semester

Electronic Systems Engineering Technology

ET 100 — INTRODUCTION TO ENGINEERING TECHNOLOGIES

2 credits

This course is designed as a developmental course for students planning to enter an engineering technology career. This course will investigate all of the Engineering Technology Division program offerings at STCC. Visits to department laboratories, visits by industry professionals, as well as participation by various Division faculty will provide the basis for a sound introduction to these programs. Activities are also designed to improve student time-management, test-taking strategies, and note-taking skills, as well as to enhance self-esteem and motivation. Women are encouraged to enroll in this course for career directions in the world of technology. PREREQUISITE: None.

ET 110 — BASIC ELECTRONICS 1

3 credits

This course is an introduction to the fundamental concepts of electronics. Coverage includes concepts of electricity, series and parallel circuits, network theorems and laws, and metering principles. The purpose of this course is to present the concepts and ideas which will be needed in more advanced course work about specific electronic systems. Emphasis is placed on the analysis of direct current networks, specifically, the calculation of such circuit parameters as current, voltage and power for various network configurations. PREREQUISITES: High school Algebra 1 and 2.

Offered Fall Semester

ET 111 — INTRODUCTION TO CAET (Computer-Aided Engineering Technology)

3 credits

This course provides the electronics student with an introduction to the PC/workstation environment. After a short introduction to personal computer (PC) hardware and operating systems concepts, the student gains experience with basic computer applications (i.e., word processing spreadsheets, and database management). Next, the student is introduced to electronic drafting (CAD) and documentation using modern software tools. Finally, the student learns the fundamentals of circuit analysis, synthesis, and simulation using standard electronics industry software packages.

*Offered Fall Semester***ET 115 — ELECTRONICS LAB 1**

2 credits

This course is the first in a sequence of four courses designed to give the student practical experience with electronic components, measuring instruments and equipment. The emphasis in the laboratory work is on the verification of theory studied in Basic Electronics 1 about direct current networks. Equal emphasis is placed on the familiarization of the student with electronic metering principles, electronic testing procedures and the use of various electronic components commonly found in the electronics industry.

*Offered Fall Semester***ET 130 — CIRCUIT THEORY 1**

4 credits

This course is an introduction to the fundamental concepts of electronics. Coverage includes concepts of electricity, series and parallel circuits, network theorems and laws, and metering principles. The purpose of this course is to present the concepts and ideas that will be needed in more advanced course work about specific electronic systems. Emphasis is placed on the analysis of networks. Specifically, the calculation of such circuit parameters as current, voltage, and power for various network configurations containing resistors, capacitors and inductors. In the laboratory the student gains practical experience working with electronic components, measuring instruments and test equipment, and PSPICE and electronic circuit simulation software package. **PREREQUISITE:** completion of or concurrent MM 132 or equivalent.

*Offered Fall Semester***ET 210 — BASIC ELECTRONICS 2**

3 credits

The fundamental concepts of alternating current circuits are presented. Starting with a review of direct current theorems and laws, the concept of alternating currents are introduced using phasor analysis. Some topics include capacitive and inductive resistance, transients, time constraints, power and power factor, the j-operator, resonant circuits, circuit Q and bandwidth, filters and switching circuits. **PREREQUISITES:** ET 110 and MM 101-MM 103.

*Offered Spring Semester***ET 215 — ELECTRONICS LAB 2**

2 credits

A continuation of Electronics Lab 1, the emphasis in this course is again placed on practical experience. The student receives continued exposure to electronic components, test equipment and circuitry. Now the laboratory work is concerned with the verification of theory studied in the student's course work on passive networks and active solid-state devices. The student gains experience in the setting up and testing of useful electronic circuits and systems. **PREREQUISITE:** ET 115 with a "C minus" or better.

Offered Spring Semester

ET 220 — ACTIVE NETWORKS 1

3 credits

This course is an introduction to the theory of solid state devices. Topics include an introduction to semiconductor materials and physics, dopings, P-N junctions, various diodes and diode circuits, an introduction to bipolar transistor biasing schemes, load line analysis, A-C models and equivalent circuits, determination of voltage and current gain, input, and output resistance, and maximum signal handling capability. PREREQUISITES: MM 103, ET 110, ET 115.

Offered Spring Semester

ET 225 — COMPUTER APPLICATIONS

2 credits

This course will introduce the student to the use of the PC for solving problems related to the electronics field. First, an introduction to a high-level language such as C is given, and the student learns how to create programs in C to solve problems. Next, the student is exposed to various software applications programs which are used to aid in the course work. PREREQUISITE: ET 111 or permission of instructor.

Offered Spring Semester

ET 230 — CIRCUIT THEORY 2

4 credits

This course will continue the presentation of the material introduced in Circuit Theory 1. After a short review of network DC and AC theory, frequency selective networks and circuits consisting of passive components introduced in Circuit Theory 1 will be studied and analyzed. Emphasis will be given to practical circuits such as filters. In the second half of the course, the student will be introduced to active networks and circuits. The fundamentals of diode and transistor operation will be covered. How these devices are biased and used as circuit and network elements will be studied. In the laboratory the student will gain increased practical experience working with both passive and active electronic components, sophisticated measuring instruments, and other test equipment. In the lab, the student will also continue to use PSPICE to analyze complex circuits, generating both data and graphical (oscilloscope-like) output. PREREQUISITE: ET 130 or permission of instructor.

Offered Spring Semester

ET 235 — DIGITAL SYSTEMS

4 credits

This course is an introduction to digital logic and circuits. Topics include number systems, logic gates, Boolean algebra and binary codes, combinational logic circuits, flip-flops and timing circuits, counters and registers, memory devices, and programmable logic. Additionally, the characteristics of logic families such as TTL, CMOS, and ECL will be studied. The laboratory portion of the course will allow the student to gain practical experience with logic gates and more complex digital ICs. PREREQUISITE: ET 130 or permission of Instructor.

Offered Spring Semester

ET 240 — AUTOMOTIVE ELECTRONICS 1

4 credits

This course introduces the principles of electricity and electronics. The topics include current, voltage, resistance, series and parallel circuits, magnetism, capacitance, and DC and AC current. Topics in semi-conductor diodes and transistors are also introduced.

Offered Spring Semester

ET 330 — FUNDAMENTALS OF PULSE & DIGITAL CIRCUITS

3 credits

The fundamentals applying to nonsinusoidal pulse, timing and switching circuits are presented. The theory is demonstrated by actual measurement and observation and the circuits are analyzed mathematically in detail. Some of the topics covered include

the application of circuit theorems, waveform analysis, integration and differentiation circuits, semiconductors as switches, multivibrators, sawtooth generators and gating and delay circuits. **PREREQUISITE:** Senior standing.

Offered Fall Semester

ET 342 — COMPUTER SYSTEMS

3 credits

This course is an introduction to the theory of computer systems operation. What a computer system consists of is examined in detail from both a software and hardware viewpoint. The organization of memory, CPU, and I/O internal to the computer is presented. The operation and characteristics of peripheral devices such as disk drives, printers, and monitors are covered. An introduction to DOS is given and application software is reviewed. Finally, the concepts of computer networks are introduced. **PREREQUISITES:** Senior standing in ET and ET 235 or permission of instructor.

Offered Fall Semester

ET 343 — LINEAR CIRCUITS

4 credits

This course presents material about the theory and operation of discrete solid state devices such as diodes and transistors. Biasing techniques and practical applications are emphasized. The second half of the course introduces the student to the operational amplifier. Use of the Op-Amp as a building block type of circuit is covered in detail. The laboratory portion of the course allows the student to gain practical hands-on experience in the construction and trouble-shooting of typical active circuits such as amplifiers and oscillators using both discrete components and linear integrated circuits. **PREREQUISITES:** ET 130 and ET 230 or ET 110 and ET 210, and ET 115 and ET 215.

Offered Fall Semester

ET 344 — COMMUNICATIONS SYSTEMS 1

4 credits

The aim of this course is to present information about the circuit processes and basic theories essential to the understanding of communications systems. Topics included in the course are noise limitations, filter theory, amplitude, frequency and single side-band modulation, radio receivers, and transmission lines. How these systems are used to transmit different information forms such as audio, video, or digital data signals is studied in detail. The laboratory portion of the course allows the student to gain practical experience with typical communications hardware and some computer applications programs pertinent to the communications field. **PREREQUISITE:** Senior standing in ET or permission of the instructor.

Offered Fall Semester

ET 345 — AUTOMOTIVE ELECTRONICS 2

4 credits

This course is a continuation of the electronic topics introduced in ET 240. Beginning with a review of semi-conductor principles and devices, the course thoroughly investigates digital electronics and micro-processor theory and applications, particularly as related to the modern automobile. **PREREQUISITE:** ET 240.

Offered Fall Semester

ET 442 — LINEAR SYSTEMS

4 credits

This course continues the presentation of materials started in ET 343. First, the more advanced applications of operational amplifiers are considered. Waveform generators, oscillators, instrumentation amplifiers and active filters implemented with op-amps receive coverage. Then, the emphasis switches to more advanced ICs used as modulators, demodulators, frequency multipliers, timers, voltage regulators, A/D and D/A converters, V/F and F/V converters, and other exotic Data Acquisition devices. The

laboratory portion of the course allows the student to gain hands-on experience with both operational amplifier circuits and other complex IC components such as A/D converters. PREREQUISITE: Senior standing in ET and ET 343 or permission of instructor.

ET 443 — MICROPROCESSOR ARCHITECTURE

4 credits

This course presents the theory of operation, the various different architectures, and the methods of interfacing of present day microprocessors. The substitution of software for hardware in logic design, the concept of the embedded controller, and the architectural features of current microprocessors/microcomputers such as the Intel 80X86 and Motorola 680X0 series will be covered in detail. The laboratory portion of the course will allow the students to gain practical hands-on experience with the programming, interfacing, and application of the microprocessor/microcomputer to the controlling of real world systems. PREREQUISITE: Senior standing in ET or permission of instructor.

ET 444 — COMMUNICATIONS SYSTEMS 2

4 credits

This course is a continuation of ET 344. It consists of a comprehensive study of theory relative to the operation of various electronic communication systems. First, theory applying to transmission lines, Smith Chart usage, modern antennas, and electromagnetic propagation is covered with some attention given to broadband cable systems. Next, digital modulation systems and broadband communications systems are explored in detail. The last portion of the course deals with microwave application, systems and devices, fiber optics and their applications, communications satellites, and television. The laboratory portion of the course allows the student to gain practical experience with typical communications systems with an emphasis on fiber optic and photonic communications. PREREQUISITE: ET 344 or permission of instructor.

Energy Systems Technology

HP 110 — THEORY OF CONTROLS

3 credits

A course designed to deal with the basic theories and concepts required by both air conditioning and heating servicemen. Topics covered include: Basic electricity, meters, principles of motor operation, transformers and relays, along with an introduction to control circuits. These studies are essential in order that the individual comprehends the control circuits to which he will be exposed in his future courses.

Offered Fall Semester

HP 120 — ENERGY SYSTEMS LAB 1

2 credits

This course deals with the development of the manual and technical skills required in the heat/power/air conditioning industry. Attention is given to current principles and practices that apply to the care and use of hand tools and measuring devices, basic machines, tubing and piping, soldering, equipment service and installation, fundamental electric circuit wiring and field service training.

Offered Fall Semester

HP 132 — ENGINEERING GRAPHICS 331

2 credits

A course that deals with the breakdown of a 3 dimensional object into simpler 2 dimensional views. These views are used to show internal shapes and dimensions of the object. Emphasis is placed on the basic skills such as proper use of drafting instruments and producing neat, concise drawings.

Offered Fall Semester

HP 220 — COMBUSTION CONTROL CIRCUITS

3 credits

Domestic and light commercial heating control systems for steam, forced warm air and forced hot water, and the components which make up each control system are covered in detail. Residential and commercial oil burners and their components, thermostats, and basic trouble-shooting are also covered during this semester. PREREQUISITE: HP 110.

Offered Spring Semester

HP 230 — ENERGY SYSTEMS LAB 2

2 credits

An advanced course that is predominantly a laboratory program. Instruction is directed toward the student achieving competency in specialized skill areas, including electrical control wiring, oil burner installation and servicing, and heating system-related components installation. Specific lab assignments directed toward installation and setup of residential heating systems. PREREQUISITE: HP 120.

Offered Spring Semester

HP 240 — PRINCIPLES OF REFRIGERATION

3 credits

The science of refrigeration is based on physics, chemistry, and the transfer of heat which forms the foundation for an understanding of the refrigeration process. After these principles are learned in the first few weeks, emphasis is placed on the refrigeration cycle and its components. A study is made of the properties of the refrigerants that are used in the different applications, and of the instruments that are necessary in the servicing of these systems, both domestic and commercial. Extensive lab assignments also bring to the students a hands-on approach to the analyzing and servicing of refrigeration and air conditioning systems.

Offered Fall Semester

HP 320 — HEATING SYSTEM DESIGN

3 credits

A lecture course designed to acquaint the student with the proper principles used in designing heating systems. A thorough coverage is made of heat transfer through building materials essential in the calculations of heat losses, for both residential and commercial structures. The student will develop the knowledge required to design efficient heating systems.

Offered Spring Semester

HP 330 — POWER PLANT OPERATION 1

3 credits

An extensive study is made of the complex systems that make up the steam generation plant. Emphasis is placed on: boiler and steam generators and their classification and structural design, applied mechanics and related equipment such as heaters, receivers, pumps and piping systems. Combustion and the transfer of heat released by the burning of fuels requires a study of thermodynamics and the heat capacities of different substances. Steam tables and other charts are used. Chimneys and the mechanical draft equipment required for the combustion process are also studied.

Offered Spring Semester

HP 340 — FUNDAMENTALS OF AIR CONDITIONING

3 credits

With the knowledge gained in Principles of Refrigeration (HP 240), a more advanced study is emphasized through extensive lab assignments dealing with the larger systems. Motors and motor safety controls, as well as other related electrical components, including relays, contactors, and transformers. Schematics and testing instruments are used in performing service and diagnostic functions. The lecture series is an in-depth study concerned with the application of the engineering principles used in the design of conditioning systems. These include psychrometrics, building surveys and load estimating procedures, ductwork and air distribution systems. PREREQUISITE: HP 240.

Offered Spring Semester

ENERGY SYSTEMS TECHNOLOGY

HP 350 — MICROPROCESSOR CONTROLS

3 credits

This course is designed to acquaint the student with microprocessor-based burner control systems as used on residential, commercial, and industrial applications. A wide range of control devices is studied, ranging from a mechanical thermostat to a fully programmable digital controller. The laboratory portion of this course will provide the student with hands-on experience in the application of commercial and industrial control systems using microprocessor-based and programmable controllers. **PREREQUISITE:** HP 220.

Offered Fall Semester

HP 411 — ADVANCED HEATING SYSTEM DESIGN

4 credits

This course is designed to acquaint the student with the proper principles and procedures in designing steam and hot water heating systems. Topics include specifications and data for piping and heating system components such as boilers, heat distributing units, pumps, valves, and fittings. Instruction is given in the layout of one-pipe steam systems, series loop and one-pipe venturi forced hot water systems, and radiant heating systems. In addition, the sizing and piping of indirect domestic hot water heaters is covered. **PREREQUISITE:** HP 320.

Offered Fall Semester

HP 425 — BUILDING MANAGEMENT SYSTEMS

4 credits

This course is an in-depth study of computer-controlled building management systems monitoring all energy-related functions including the heating, air conditioning, lighting, and other environmental systems. The course will include system automation, sensors for monitoring various points in the facility, energy management system software, and remote access to the system. In the laboratory portion of this course, the student will interface the computer operations with the heating and air conditioning systems to provide a totally automated building environment. **PREREQUISITE:** HP 350.

Offered Spring Semester

HP 430 — POWER PLANT OPERATION 2

3 credits

A comprehensive study geared to an actual power plant. The College's own complex, and others in the local area are used to acquaint the student with typical power plant operations. An in-depth study is made of the components that make up the entire power station and the different combustion control methods required for safety and efficiency. Boiler feed-water treatment is a must for power engineering students because of the effects of the scale-forming salts found in water supply systems. **PREREQUISITE:** HP 330.

Offered Fall Semester

Engineering and Science Transfer (See Engineering Transfer)

Engineering Transfer Option to Engineering & Science Transfer

ME 100 — SPECIAL PROJECTS IN ENGINEERING 1

1, 2, 3, or 4 credits

Special projects in engineering under the direction of an instructor. **PREREQUISITE:** Permission of the Department Chairperson.

Offered Fall and Spring Semesters

ME 101 — SPECIAL PROJECTS IN ENGINEERING TECHNOLOGY 1

1, 2, 3 or 4 credits

Special projects in Engineering Technology under the direction of an instructor. **PREREQUISITE:** Permission of Department Chairperson.

Offered Fall and Spring Semesters

ME 102 — SPECIAL PROJECTS IN ENGINEERING TECHNOLOGY 2

1, 2, 3, or 4 credits

Continuation of Special Projects in Engineering Technology 1. **PREREQUISITE:** Permission of the Department Chairperson.

Offered Fall and Spring Semesters

ME 106 — INTRODUCTION TO COMPUTER-AIDED DRAFTING

1 credit

An introduction to the terminology and capabilities of the computer as an engineering design tool. Weekly lectures, laboratory exercises, and assignments will acquaint students with the available CAD software and hardware, and will enable them to produce dimensioned orthographic drawings and libraries of symbols and shapes useful in engineering applications.

Offered Fall Semester

ME 108 — INTRODUCTION TO COMPUTING (PASCAL)

4 credits

A first course in engineering dealing with engineering computations utilizing digital computers. Specific topics include a comprehensive study of the computer language Pascal, several numerical analysis techniques, and an introduction to linear algebra. A strong emphasis will be placed on using the computer to do extensive or repetitive computations in these areas. A brief overview of the field of engineering will also be presented. Three hours of lecture and one three-hour laboratory per week. **CO-REQUISITE:** MM 155.

Offered Fall and Spring Semesters

ME 109 — INTRODUCTION TO ENGINEERING GRAPHICS

1 credit

This course is an introduction to the tools and techniques of technical drawing. Traditional multiview layouts using orthographic projection, isometric view, section views, and auxiliary views will be covered. Freehand isometric sketching will be practiced, and drawings will be executed in paper and pencil on drawing board, using T-square, ruler, compass, and French curve. The student will learn elements of descriptive geometry and conventions of dimensioning and notation. **PREREQUISITE:** None.

Offered Fall Semester

ME 200 — SPECIAL PROJECTS IN ENGINEERING 2

1, 2, 3, or 4 credits

Continuation of ME 100. **PREREQUISITE:** Permission of Department Chairperson.

Offered Fall and Spring Semesters

ME 203 — COMPUTER APPLICATIONS IN ENGINEERING

4 credits

An introduction to the uses of the microcomputer as an engineering tool. Three applications will be introduced: computer-aided drafting and design (CAD), the spreadsheet, and symbolic mathematics. State-of-the-art computer hardware, software, and peripheral devices will be used. One third of the course will introduce the spreadsheet as an engineering problem-solving tool that facilitates complex calculations, rapid graphical analysis, and numerical modeling. The next third of the course will introduce a symbolic mathematics package that enables students to solve complex algebraic and calculus problems, plot functions, and perform iterative computations. The final third of the course will be devoted to CAD, the production of standard two-dimensional engineering drawings, and three dimensional models. Three hours of lecture and three hours of laboratory work per week. **COREQUISITE:** MM 155, Calculus 1.

Offered Fall and Spring Semesters

ENGINEERING TRANSFER

ME 204 — NUMERICAL ANALYSIS & COMPUTER METHODS

3 credits

Extensive application of programming languages to diverse engineering problems. Numerical techniques for evaluating functions, curve fitting, interpolation, differentiation and integration and solving systems of algebraic and first and second order differential equations. Satisfies concentration requirements for transfer in computer science. PREREQUISITE: ME 104, Introduction to Engineering 22/Computer Programming.

Offered Fall Semester

ME 208 — PROBLEM SOLVING USING FORTRAN 77

2 credits

An introduction to the computer language Fortran 77 with an emphasis on good programming style as a means to solving realistic engineering problems. Students will be able to use mainframe and microcomputer facilities on campus or off campus to complete biweekly programming projects that will be chosen to introduce the various disciplines of engineering: civil, mechanical, electrical, and chemical. Separate weekly homework exercises will follow the development of the rules of syntax of the language, including formatted input and output of data, the use of direct-access and sequential-access data files, subscripted arrays, DO loops and other structures, character variables, and subprograms. Elements of numerical analysis, including numerical integration and methods for solving simultaneous equations will also be introduced. PREREQUISITE: MM 155, ME 108/MK 103.

Offered Fall Semester

ME 303 — INTRODUCTION TO MECHANICAL DESIGN

3 credits

Lectures will cover the principles of engineering graphics, an introduction to modern techniques of engineering design, and how to manage associated CAD activity. Specific topics will include multiview drawings, auxiliary views, sectioning; fastening methods (screws, rivets, welds, etc.); motion/force elements (springs, gears, cams, etc.); dimensioning and tolerancing; electromechanical components; pneumatic and hydraulic components; idea generation; the CADL language; and pictorials, renderings, and solid shading. PREREQUISITE: ME 203.

ME 310 — MECHANICS 1 (STATICS)

3 credits

This is the first mechanics course for engineering majors. It is a vector approach to the solution of equilibrium problems for particles, rigid bodies, and multi-membered structures (frames, machines, and trusses). In order to broaden the scope of problems available for analysis, the student is introduced to the study of friction forces and centroids. Also, for preparation for future mechanics courses, the topics of moment of inertia and shear and bending moments are introduced. PREREQUISITE: MM 155 and Physics MP 132.

Offered Fall Semester

ME 320 — CIRCUIT ANALYSIS 1

4 credits

Terminal characteristics of ideal elements, active and passive. Ohm's Law and Kirchoff's Law. Introduction to network topology, independent variables, loop and nodal analysis. Definition and consequences of the linearity and superposition theorems. Excitation and response, passive equivalent circuits, active equivalent circuits, Thevenin and Norton theorems, inductance and capacitance, VI characteristics, energy relations are covered, as well as first and second order transient response to unit step and unit impulse excitation functions, initial conditions, and natural frequencies. The complex-frequency s-plane. PREREQUISITES: MM 255 and MP 132.

Offered Fall Semester

ME 322 — INTRODUCTION TO DIGITAL SYSTEMS

3 credits

An introduction to the theory of digital circuits, stressing general techniques for the analysis and synthesis of combinational and sequential logic systems. PREREQUISITES: ME 103/ME 203/ME 208.

*Offered Fall Semester***ME 324 — ELECTRICAL ENGINEERING LAB 1**

1 credit

This experimental work is designed to verify theory discussed in ME 320 and MK 320. Six experiments will be performed on both analog and digital circuits. The experiments involve resistive measurements, Kirchoff's Laws, network theorems, conversion of power and maximum power transfer, inductance and capacitance, first and second order transient response, combinational logic design, and sequential logic design. CO-REQUISITE: ME 320.

ME 330 — INTRODUCTION TO MATERIALS SCIENCE AND ENGINEERING

3 credits

A survey of the materials of engineering and the atomic, molecular, and crystal phenomena responsible for their properties. The unifying theme is that the structures of materials determine their properties. Materials considered include alloys, semiconductors, polymers, and ceramics. Homework and tests are designed to build technical vocabulary and facility with tabulated and graphic data in solving basic materials analysis and design problems. PREREQUISITES: MC 103 and MC 203.

*Offered Fall Semester***ME 335 — MECHANICS OF MATERIALS**

3 credits

Engineering applications of the principles of solid mechanics. Uniaxial and torsional problems are discussed, followed by beam deflections. Plane stress and strain are then presented, followed by stability problems in column design. PREREQUISITES: ME 310 and MM 255.

*Offered Spring Semester***ME 340 — INTRODUCTION TO CHEMICAL ENGINEERING**

3 credits

An introduction to the material and energy balances commonly applied to processes in the chemical, petroleum and environmental fields. Also included is a study of the pressure-volume temperature relationships of gases and a brief introduction to selected thermodynamic properties of solids, liquids, and gases. Computer solutions are utilized in selected problems. PREREQUISITES: MM 255, MC 203, and ME 208/ME 203.

*Offered Spring Semester***ME 350 — ENGINEERING THERMODYNAMICS 1**

3 credits

A classical presentation of thermodynamics including the first and second laws and their application to batch and flow processes. Ideal gas, real gas, graphical, and tabular relationships among the physical properties of substances which are affected by energy transformations including pressure, temperature, volume, internal energy, enthalpy, and entropy. Heat engines, heat pumps, and carnot cycles. PREREQUISITES: MM 355, MP 132, and MC 203.

*Offered Spring Semester***ME 410 — MECHANICS 2 (DYNAMICS)**

3 credits

Vector calculus is developed and applied to the solution of kinematic and kinetic problems involving particles and rigid bodies. Different coordinate systems are utilized and kinetics analysis is applied using force balances, the impulse momentum principle, and the work energy theorem. PREREQUISITE: Mechanics 1 ME 310.

Offered Spring Semester

ENGINEERING TRANSFER

ME 420 — CIRCUIT ANALYSIS 2

4 credits

Complex numbers, sinusoidal forcing functions, phasors, sinusoidal steady-state. Average real power, reactive power, and RMS values. Exponential forcing function, poles and zeros, in the s-plane, concept of the transfer function and its use in determining the forced response and natural behavior of circuits. Frequency response and resonance, Thevenin, Norton, superposition and maximum power theorems in the frequency domain, trigonometric and exponential Fourier series, and the LaPlace Transform are covered, as well as magnetic coupling, mutual inductance, and ideal transformers, two-port parameter circuit analysis. PREREQUISITE: ME 320.

Offered Spring Semester

ME 423 — ACTIVE NETWORKS

3 credits

Topics include an introduction to the physics of the p-n semiconductor junction diode, the NPN and the PNP bipolar junction transistor (BJT), BJT biasing circuits, the field effect transistor (FET), FET biasing circuits, small signal analysis in the BJT and FET, multistage circuits and frequency response, feedback amplifiers and oscillator circuits, and switching circuits for digital logic applications. The circuit analysis program PSPICE will be utilized extensively. PREREQUISITE: ME 320, MK 320, or ME 322; COREQUISITE: ME 420.

Offered Spring Semester

ME 427 — ELECTRICAL ENGINEERING LAB 2

1 credit

This experimental work is designed to verify theory discussed in ME 420. Six experiments will be performed on both analog and digital circuits. The experiments involve OP-AMP circuits, D and A conversion circuits, magnitude and phase measurements of impedance, frequency response, resonance, transformers. CO-REQUISITE: ME 420.

ME 440 — CHEMICAL ENGINEERING THERMODYNAMICS 1

3 credits

An introductory course dealing with the fundamental concepts and laws of thermodynamics and of the thermodynamic properties of materials. The major emphasis is on chemical systems. PREREQUISITE: ME 340.

Offered Spring Semester

English

LD 055 — READING 1 ESL

3 credits

Reading 1 ESL offers basic reading skills to students for whom English is a second language. Its main objective is to improve pronunciation and vocabulary. This is done by developing visual and auditory recognition and decoding skills used with English sound and words. Some comprehension and study skills will be included in the course.

LD 080 — ENGLISH AS A SECOND LANGUAGE LEVEL 1

3 credits

This course in the acquisition of development of basic language skills provides the student with a guided program in the areas of conversational fluency, reading and listening comprehension, vocabulary development and elementary written expression. Pretests are used to evaluate individual competency and priority.

LD 081 — ENGLISH READING COMPREHENSION FOR BILINGUALS LEVEL 1

3 credits

This course is a review of the basic language skills that are introduced in the LD 080 — English as a Second Language 1 course. It is offered jointly with LD 080.

LD 082 — BASIC SKILLS IN CONVERSATION LEVEL 1

3 credits

This course is a conversation course with emphasis given to oral skills, and conversational fluency. Through a broad range of student-centered activities, students are given the opportunities to practice and reinforce important grammatical structures and patterns.

LD 083 — ENGLISH AS A SECOND LANGUAGE LEVEL 2

3 credits

English as a Second Language Level 2 is an intensive course designed for advanced beginning students of English as a Second Language. Through extensive oral and written drills and exercises, the course offers students an opportunity to master the fundamentals of English grammar and usage.

LD 084 — ENGLISH READING COMPREHENSION FOR BILINGUALS LEVEL 2

3 credits

This course is a review of the language skills introduced in the E.S.L. 2 course. It is offered jointly with LD 083. The focus of the course is on reading and writing development in English through exercises in the texts, dictations, spelling drills, written classwork, and homework assignments. Learning to write one paragraph well is emphasized in this course. Recognition and implementation of the title, topic sentence, and good paragraph development and form are essential to complete the course objectives.

LD 085 — BASIC SKILLS IN CONVERSATION LEVEL 2

3 credits

This course is an advanced conversation course with emphasis on oral skills. English Conversation 2 is a three-credit course designed for advanced beginning students of English as a Second Language. Through a broad range of student-centered activities, students are given an opportunity to practice and reinforce important grammatical structures and patterns. While these activities take various forms—role-plays, extended guided conversations, questions about the students' real world, and topics for classroom discussion or debate—they are intended to engage actively the students in meaningful conversation based upon their interests, backgrounds, and imagination.

PREREQUISITES: To enter ESL 2, ERCB 2, and Basic Skills Conversation 2, students must either have successfully completed ESL 1, ERCB 1, and Basic Skills Conversation 1, or have scored at the appropriate level on the placement examinations of the English as a Second Language program. English Conversation 2 is a complement to these courses and is generally taken simultaneously.

LD 086 — ENGLISH AS A SECOND LANGUAGE LEVEL 3

3 credits

This is a grammar course. It is assumed that the students who are enrolled in it have successfully completed LD 080 through LD 085 inclusively, or have been tested and placed into the Level 3 curriculum. The emphasis will be on verb forms, mechanics, and syntactical structures.

LD 087 — ENGLISH READING COMPREHENSION FOR BILINGUALS (ERCB)

3 credits

This is a basic reading course to develop vocabulary, comprehension, and critical thinking. It is offered jointly with LD 086. Students will be required to read text material which covers a variety of cultural material. In addition, students will be required to do

ENGLISH

outside readings from the newspaper and a fiction or non-fiction book, and write reports. Students will demonstrate their understanding of these materials by oral and written discussions.

LD 088 — BASIC WRITING SKILLS 1

3 credits

Course is designed to meet the needs of students who have attained proficiency in English. It will provide practice in writing paragraphs and essays. The emphasis will be on writing skills, with an exit essay required.

LD 089 — ESL READING

3 credits

This course reviews phonics and pronunciation as well as basic English vocabulary and literal comprehension.

LD 091 — READING LEVEL 1

3 credits

Reading 1 offers practice in active reading skills for improved comprehension and efficiency, as well as vocabulary development using a variety of materials from textbooks, literature, and periodicals. Students will be introduced to the STCC Library in this course.

Offered Fall and Spring Semesters

LD 092 — READING LEVEL 2

3 credits

Reading 2 emphasizes critical reading, addressing general and specific comprehension skills for library research, reading textbooks, technical material and literature. Vocabulary development focuses on context and structural analysis.

Offered Fall and Spring Semesters

LD 093 — BASIC WRITING SKILLS 2

3 credits

This course is a continuation of LD 088. Classes meet five times a week plus writing lab time. Basic sentence structure, punctuation, and essay development are emphasized to provide E.S.L. students needed practice in written communication to prepare for Composition 1. **PREREQUISITE:** LD 088.

LD 094 — SPEECH FOR FOREIGN STUDENTS: E.S.L.

3 credits

This course will give E.S.L. students the practice needed to communicate orally. Pronunciation, organization of ideas, creativity, presentation, and self-evaluation will be developed. Speeches, news reports, discussions, and demonstrations will be some of the kinds of oral communication in which students will take part. **PREREQUISITE:** E.S.L. 3 course or permission of instructor (Speech therapist lab time required for students who need speech therapy; meets three times a week).

LD 099 — REVIEW FOR COLLEGE WRITING

3 credits

This course provides a review of basic English skills in grammar, sentence structure, paragraphing, and essay development to prepare students for college-level writing. The course, intended for students who have had difficulty with written English, provides preparation for LE 100, but it cannot be counted for graduation credit.

Offered Fall and Spring Semesters

NOTE: All college-level English courses require proficiency in the spoken and written English language.

LE 100 — ENGLISH COMPOSITION 1

3 credits

The objective of this course is to improve the student's ability to communicate effectively in writing. Areas covered in this course will include the effective construction of paragraphs and essays, rhetorical modes, and the documented research paper.

Offered Fall and Spring Semesters

LE 200 — ENGLISH COMPOSITION 2: AN INTRODUCTION TO LITERATURE

3 credits

This course involves the close reading and class discussion of fiction, poetry and plays, and writing essays about literature. Emphasis is on the role of individual literary works as expressions of universal human experience. **PREREQUISITE:** LE 100.

Offered Fall and Spring Semesters

LE 201 — BUSINESS ENGLISH

3 credits

This course is designed to prepare business students to meet the requirements of writing all kinds of communications in the business world, emphasizing the construction of proper business letters, resumes, and memoranda. Students develop an understanding of correct style, form, and tone and gain an ability to write clear and concise business communications. **PREREQUISITE:** LE 100.

Offered Fall and Spring Semesters

LE 202 — TECHNICAL REPORT WRITING

3 credits

Instruction has been organized to emphasize methods involved in the writing process. Special emphasis has been placed on the factors which report writers must consider and the processes they must follow in writing a report. The student will become acquainted with the techniques of analyzing a writing situation, methods of investigating the problem, organizing the report and preparing the final copy. **PREREQUISITE:** LE 100.

Offered Fall and Spring Semesters

LE 203 — FUNDAMENTALS OF SPEECH

3 credits

Everyone must communicate in life, and this course is about communicating in personal affairs, employment, and society. Students will write and present talks about a variety of topics and situations. Being educated means having something to say; this course will help you say it.

Offered Fall and Spring Semester

LE 300 — LITERATURE OF THE WESTERN WORLD: BC TO 17TH CENTURY

3 credits

This course examines literary classics of Western culture to develop both an appreciation of their intrinsic worth and an awareness of their significance in the history of ideas and of literature. Selections from Biblical, Classical, Medieval, and Renaissance periods are read and discussed. **PREREQUISITE:** LE 100; **RECOMMENDED:** LE 200. Honors component available.

Offered Fall and Spring Semesters

LE 301 — ENGLISH LITERATURE:**ANGLO-SAXON TO NEOCLASSICAL PERIODS**

3 credits

Readings in English literature from the Anglo-Saxon to the Neoclassical periods are studied with attention to their content and style. Such works as Beowulf, The Canterbury Tales, King Lear, and Paradise Lost are examined as representations of major literary and intellectual movements in Britain. **PREREQUISITE:** LE 100; **RECOMMENDED:** LE 200. Honors component available.

Offered Fall and Spring Semesters

LE 302 — AMERICAN LITERATURE: 1620-1860

3 credits

The growth of American Literature from the Colonial period to the Civil War reflects major developments in American thought, beliefs, and values. Such writers as Bradford, Bradstreet, Edwards, Franklin, Hawthorne, Emerson, Thoreau, and Stowe will be the

basis of our close, critical reading and discussion, representing our literary and intellectual heritage. **PREREQUISITE:** LE 100; **RECOMMENDED:** LE 200. Honors component available.

Offered Fall Semester

LE 304 — INTRODUCTION TO AFRICAN-AMERICAN LITERATURE 1 3 credits

This course is designed to accomplish two aims. First, there will be a concentrated study of the writings of African Americans, including the oral tradition. Secondly, this course will focus on developing an awareness of the unique quality of African life and culture, as well as of its contributions to world literature. Honors component available.

Offered Fall Semester

LE 305 — CHILDREN'S LITERATURE 3 credits

Children's Literature is an elective one-semester survey course. The material includes the study of novels for children 8-12; picture books, their subject matter and illustrative technique; folktales and literary tales; and children's poetry. The emphasis is on American publications. **PREREQUISITE:** LE 100 or permission of instructor.

Offered Fall and Spring Semester

LE 308 — WOMEN IN LITERATURE 3 credits

This course will focus on the roles, myths, and stereotypes of women in different historical periods, and relate these roles to the social structure, the status, and function of women in the particular social setting in which the literary works were written. The study will enable us to discover to what extent the image of women in literature reflects reality, and to what extent it is an ideal encouraged to keep women in a particular role. An anthology of short stories by internationally-known women writers is a required text, along with Kate Chopin's novel *The Awakening*. **PREREQUISITE:** LE 100; **RECOMMENDED:** LE 200. Honors component available.

Offered Fall Semester

LE 309 — INTRODUCTION TO JOURNALISM 3 credits

An introductory course designed to explore the overall area of journalism as related to producing a weekly student newspaper. The class is conducted as a workshop with instruction focused on news reporting, feature writing, and page layout.

Offered Fall and Spring Semesters

LE 310 - 312 — COLLEGE THEATER WORKSHOP 1, 2, & 3 1, 2, or 3 credits

This is a play production course. Each semester a play is chosen to be prepared and performed at the end of the semester. Students may select one, two, or three credits and participate on a limited or standard course time basis. Students will be involved in various theater activities: acting, set construction, set decoration, props, lights, and costumes. This course may be taken by students, faculty, and staff as a co-curricular activity with or without credit. **PREREQUISITES:** LE 203 or LE 100.

Offered Fall and Spring Semesters

LE 321 — INTRODUCTION TO CREATIVE WRITING 3 credits

Students will have the opportunity to write poetry, fiction, and drama using contemporary and traditional models for their work. For each genre, students will practice appropriate strategies, including such techniques as imagery, metaphor, rhyme and rhythm, point-of-view, dialogue, characterization, and plot development. Students will be offered practice in all three genres, but are encouraged to focus on the genre of their choice for extensive writing and revision. Preparation of a portfolio is required of each student. Final projects will include a class reading of finished pieces and publication of a literary magazine. **PREREQUISITE:** LE 200, or LE 100 and permission of instructor. Honors component available.

Offered Fall and Spring Semesters

**LE 400 — LITERATURE OF THE WESTERN WORLD:
18TH TO 20TH CENTURIES**

3 credits

This course examines significant literary works from the 18th century to the modern era, to develop both an appreciation of their intrinsic worth and an awareness of their significance in the history of ideas and of literature. Selections from the prose, poetry, and drama of these periods are read and discussed. PREREQUISITE: LE 100; RECOMMENDED: LE 200. Honors component available.

*Offered Fall and Spring Semester***LE 401 — ENGLISH LITERATURE 2: ROMANTICISM TO MODERNISM**

3 credits

This course is a continuation of English Literature 1 and consists of readings from the Romantic period to the twentieth century. Works of such writers as Wordsworth, Coleridge, Keats, Dickens, the Brownings, Joyce, and Woolf may be included in the course. The works are studied from the same critical perspective and with the same emphasis as in LE 301. PREREQUISITE: LE 100; RECOMMENDED: LE 200. Honors component available.

*Offered Spring Semester***LE 402 — AMERICAN LITERATURE: 1860-PRESENT**

3 credits

Readings of American fiction, poetry, and drama from the Civil War to the present, ranging from Whitman, Dickinson, Twain, James, to Frost, Fitzgerald, Hemingway, Faulkner and several contemporary writers. This course continues the survey of American literature from the same critical perspective as LE 302. PREREQUISITE: LE 100; RECOMMENDED: LE 200. Honors component available.

*Offered Spring Semester***LE 408 — WOMEN IN LITERATURE 2**

3 credits

This course will serve as a natural progression of the basic survey course in Women in Literature. However, rather than focusing on short stories by women, Women in Literature 2 will examine women's short novels, plays, essays, and poetry. PREREQUISITE: LE 100; RECOMMENDED: LE 200. Honors component available.

*Offered Spring Semester***LE 450 — STAGE-CRAFT**

3 credits

Set design and stage lighting will be the focus of this studio course. Students will use computer drawing and painting applications to explore design possibilities. They will work with a theatrical director to develop and produce set components or lighting sequences for a play. PREREQUISITES: LE 410, ET 130.

*Offered Spring Semester***LE 900 — DIRECTED STUDY IN ENGLISH**

Variable Credit

Projects for advanced individual study by special arrangement with the instructor and approval of the Department and Division Chairpersons. Students are expected to demonstrate willingness and ability to work on their own with minimal assistance.

Environmental Technology

HE 210 — MUNICIPAL WASTEWATER PLANT OPERATIONS 1

3 credits

An investigation of the physical and chemical operations utilized in the treatment of liquid wastes. It includes such topics as theory of water pollution, collection systems, safety, odor control, disinfection, phosphorus removal, screening, grit removal and clarification. The course meets for three hours of class each week. PREREQUISITES: None.

Offered Spring Semester

ENVIRONMENTAL TECHNOLOGY

HE 230 — ENVIRONMENTAL PRACTICUM

3 credits

The practicum is supervised work experience in an environmental field for 192 hours. Typical work experience includes: wastewater treatment plant operations; maintenance and lab work in municipal or industrial wastewater facilities; water treatment plant and water systems operations; maintenance, installation, and lab work; and hazardous waste sampling, analysis, clean-up, processing, and regulatory compliance. Practicum sites may include: municipal wastewater plants, industrial wastewater plants, public or private water treatment systems, environmental consulting firms, hazardous waste contractors, environmental laboratories, and regulatory agencies.

Offered Summer Session

HE 315 — FACILITIES MAINTENANCE AND INSTRUMENTATION

3 credits

This course is a study of equipment maintenance and instrumentation as it pertains to industrial/municipal wastewater, water treatment facilities, and hazardous waste situations. Maintenance topics include: bearings, valves, pipe systems, pumps, seals, couplings, variable drives, and lubrication. Instrument topics include: principles of hydraulics, and measurement of flow. Demonstrations will be utilized to visualize the lecture material. The course meets three hours each week. PREREQUISITE: None.

Offered Fall Semester

HE 321 — FUNDAMENTALS OF INDUSTRIAL HYGIENE

4 credits

A study of the interaction between work place chemical, radiological, and physical exposures to human health. Topics include: anatomy of the lungs, skin, eyes and ears; hazards including dust, solvents, flammables, noise, ionizing and non-ionizing radiation; criteria for health exposure, fire hazards, and physical hazards. This course meets for three hours of class and three hours of lab each week. PREREQUISITES: MC 101 and MC 201, MM 132 or permission of instructor.

Offered Spring Semester

HE 325 — OCCUPATIONAL SAFETY

3 credits

A course of study intended to provide instruction on the Occupational Health and Safety Administration (OSHA) general industry standards 29 CFR 1910 to entry-level participants. Primary topics include the OSHA Act, introduction to the OSHA standards, OSHA inspections, record keeping, and hazard communication. Study of the standard subparts include such topics as personal protective equipment, material handling, electrical hazards, machine guarding, hearing conservation, walking and working surfaces, and means of egress. Particular attention is given to the reading and application of the OSHA standards. After meeting the requirements, a certificate for successful completion is issued by the U.S. Department of Labor. This course meets for three classes per week. PREREQUISITES: None.

Offered Fall Semester

HE 330 — MUNICIPAL WASTEWATER PLANT OPERATIONS 2

3 credits

A study of biological processes utilized to treat liquid wastes including trickling filters, activated sludge, and rotating biological contactors and solids processing including thickening, conditioning, stabilization, dewatering, incineration, and solids utilization. Field trips will reinforce lectures. The course meets for two hours of class and three hours of lab each week. PREREQUISITE: HE 210 or permission of instructor.

Offered Spring Semester

HE 340 — TOXICOLOGY

3 credits

This course presents the fundamentals of toxicology as applied to environmental and occupational exposures. A thorough examination of the routes of exposure, effects on target organs, and dose response is presented. Toxic agents including pesticides,

metals, solvents, and radioactive materials; carcinogens, mutagens, and teratogens; the application of the principles of toxicology and the basics of risk assessment are included. PREREQUISITES: MC 101 and MB 102 or permission of instructor.

Offered Fall Semester

HE 410 — WATER AND INDUSTRIAL WASTEWATER TREATMENT 3 credits

Unit processes including aeration, coagulation-flocculation, sedimentation, softening, disinfection, ion exchange, fluoridation, carbon absorption, filtration, and chemical oxidation/reduction are studied. Local industries and their pollution sources, and the problems in drinking water supplies are covered as applicable to the above unit processes. Field trips will augment the lecture material. This course meets for two hours of class and three hours of lab each week. PREREQUISITE: MC 101 or permission of instructor.

Offered Spring Semester

HE 435 — SAFETY RISK MANAGEMENT 3 credits

A study of methods used to control losses including financial, property, production, and worker from occupational and environmental accidents. Hazard identification, control methods, data collection, and cost analysis are applied to the principles of loss control. Practical applications of work place assessment, job safety analysis, accident investigation techniques, and accident prevention programs are included. PREREQUISITE: HE 325 or permission of instructor.

Offered Spring Semester

HE 440 — HAZARDOUS MATERIALS AND WASTE MANAGEMENT 1 3 credits

A study of RCRA regulations for small quantity generators. A survey of regulations for the following: RCRA for large quantity generators, underground storage tanks, hazard communication, and community right-to-know. This course meets for three class hours per week. PREREQUISITE: None.

HE 441 — HAZARDOUS MATERIALS AND WASTE MANAGEMENT 2 3 credits

A study of the procedures for working in a hazardous waste site. Included are safety and health program, medical surveillance, decontamination, site characterization and analysis, protective clothing, monitoring equipment, site control work, documentation, emergency response, engineering and administrative control to reduce exposure, and site safety principles. Lab activity includes participation in a mock site cleanup. This course matches the description of 29 CFR 1910.120 for Hazardous Waste Site Worker Training. The course meets for two hours of class and three hours of lab each week. Medical examination required for students who wish to receive a statement of successful completion.

Executive Office Administration
(See Office Administration)

Finance
(See Business Administration)

Fine Arts Option to Liberal Arts Transfer

LA 140 — ART HISTORY: PREHISTORIC TO GOTHIC

3 credits

Art History is a survey of the major visual arts of the western world: architecture, painting and sculpture of the Paleolithic Era, Ancient Egypt and Mesopotamia, the Aegean, Greece and Rome, Early Christianity and Islam, the Romanesque and Gothic periods. The course is designed to help the student to understand the impulse behind the key monuments in the history of western art. Slide-lecture instruction, using Janson's *History of Art*. Three in-class hours weekly. PREREQUISITE: None. Honors component available.

Offered Fall Semester

LA 142 — PAINTING 1

3 credits

Easel painting in oils. Based on elementary understanding of the physical properties of oil medium, the course will emphasize individual expression within the framework of instruction in technical development, principles of pictorial composition and elements of visual representation. The main course objective is to increase students' sophistication toward aesthetic concerns and pictorial content while developing technical skills. No previous art background is required. Five in-class hours weekly.

Offered Fall and Spring Semesters

LA 143 — PRINTMAKING 1

3 credits

Basic study of materials, techniques and aesthetic consideration peculiar to relief printmaking. Includes a special segment on producing monotypes and monoprints from intaglio plates and woodblocks. Students will create a series of prints using these techniques and will develop an understanding of the printmaking process in general by studying historical and contemporary prints. No previous art background is required. Five in-class hours weekly.

Offered Spring Semester only

LA 145 — FIGURE DRAWING

3 credits

The primary focus of this course is the study of the human figure as a vehicle for clarifying both perception and expression. A primary course objective is the acquisition by the student of a sense of evaluative process inherent in making and viewing art works in various drawing media. Basic drawing helpful, but not a prerequisite. Five in-class hours weekly.

Offered Spring Semester

LA 146 — DESIGN: INTRODUCTION TO ART

3 credits

A studio workshop course which teaches the basic concepts in two-dimensional design, providing the foundation needed to understand and produce significant drawings, paintings, prints, and graphic expressions. Working in collage, students complete projects emphasizing the plastic elements individually (line, shape, texture, etc.) and the aesthetic principles (rhythm, balance, unity, etc.) Main objectives of the course include establishment of a sophisticated art vocabulary, understanding of color theory, and the perception of spatial phenomena in their varied forms on two-dimensional surfaces. No previous art background is required. Five in-class hours weekly.

Offered Spring Semester

LA 147 — BASIC DRAWING

3 credits

An introduction to a variety of drawing materials, techniques, and concepts. Emphasis is placed on developing each student's individual drawing strengths and making the student critically aware of the aesthetic soundness of a wide range of drawings, as each fulfills a different, expressive impulse. No previous art background is required. Five in-class hours weekly.

Offered Fall and Spring Semesters

LA 149 — DRAWING COMPOSITION

3 credits

Drawing will be approached as a basis of composition and training in observation. Emphasis will be placed on developing perceptual awareness and critical self-evaluation as means toward growth in one's abilities in visual self-expression. Students will be encouraged to explore areas of individual strengths and interests. Five (5) in-class hours weekly. PREREQUISITE: LA 147 or permission of instructor.

Offered Spring Semester

LA 240 — ART HISTORY: RENAISSANCE AND BAROQUE

3 credits

A survey course in the major visual art expressions of Western man, covering the Late Gothic period north of the Alps, the Renaissance, Baroque and Rococo art of Italy, Germany, France, Spain, Flanders, Holland, and England. Emphasis is placed upon understanding the impulse behind man's artistic expression; the link between works of art and the culture in which they are produced. Slide-lecture instructions, using Janson's *History of Art*. Art History 1 is not a prerequisite. Three in-class hours weekly. Honors component available.

Offered Spring Semester

LA 242 — PAINTING 2

3 credits

Painting 2 is a continuation of Painting 1 offering the student the opportunity to explore a variety of media and techniques in painting. Students must explore a variety of spatial concepts used by the painter, working the problems presented as the course content into their own framework of artistic direction. PREREQUISITE: Painting 1 or permission of the instructor. Five in-class hours weekly.

Offered Fall and Spring Semesters

LA 243 — PRINTMAKING 2

3 credits

A continuation of Printmaking 1 with more advanced problems in technique and color process. Emphasis is placed on the development of individual direction. Five in-class hours weekly. PREREQUISITE: Printmaking 1 or permission.

Offered Spring Semester

LA 360 — EXPERIMENTAL COMPUTER IMAGING 1

4 credits

This lab/studio course integrates the computer into the creative process of image production. Students use the computer to produce transformations of a digitized video image of themselves. They learn to create abstract designs based on natural images, and construct whole images from pieces. PREREQUISITE: LA 146 or permission of instructor.

Offered Fall Semester

LA 441; LA 442; LA 443 — DIRECTED STUDY IN ART

variable credit

Projects for advanced individual study by special arrangement with the instructor and approval of the Department and Division Chairpersons, the Academic Dean, and the Registrar. Students are expected to demonstrate willingness and ability to work on their own with minimal assistance.

Offered Fall and Spring Semesters

FINE ARTS

LA 460 — EXPERIMENTAL COMPUTER IMAGING 2

4 credits

Students will develop a portfolio of computer-generated images using techniques used in LA 360. **PREREQUISITE:** LA 360.

Offered Spring Semester

Foreign Languages

SPANISH

LF 121 — ELEMENTARY SPANISH 1

3 credits

This course introduces the student to the basic grammatical structure of the Spanish language, with emphasis on pronunciation and Latin American culture. Intense oral drills review vocabulary used in real life situations and cultural themes connected with the Hispanic world. A contrast between English and Spanish and the use of cognates increases comprehension and vocabulary. **PREREQUISITES:** Clearance for Comp. 1 in the English Placement Test or permission of instructor.

Offered Fall and Spring Semesters

LF 122 — CONVERSATIONAL SPANISH

3 credits

The focus of this course is on speaking and understanding the contemporary idiomatic patterns of the native speaker. Special attention is given to pronunciation and simple conversational patterns. Contemporary themes are emphasized, giving police, firemen, medical personnel and other interested groups the ability to express themselves in Spanish. **PREREQUISITE:** Comp. 1 status or permission of instructor.

Offered Fall and Spring Semesters

LF 221 — ELEMENTARY SPANISH 2

3 credits

This is a continuation of Elementary Spanish 1, with emphasis on the four basic skills necessary for the mastery of a foreign language: listening, speaking, reading, and writing. More sophisticated grammatical and linguistic concepts are introduced and discussed, using the Spanish language as a tool for communication. Students gain knowledge of the contemporary thought of Hispanics in the United States and in the Hispanic world. Intense oral drills and practical vocabulary. **PREREQUISITE:** LF 121 or equivalent.

Offered Fall and Spring Semesters

General Business

(See Business Administration)

General Business/Transfer Compact Option

(See Business Administration)

Graphics Arts Technology

GA 120 — TYPOGRAPHY

3 credits

Typography is the art and process of working with and printing from type. This lecture and laboratory course is designed to introduce the elements of type from its origin to the functions of today's state-of-the-art computer typesetting. Students will learn the technical background of typesetting methods, type classifications and fonts, measurements, comping, designing, and arranging type. Introduction to basic pasteup procedures and the uses of various graphic arts tools and materials will be covered.

Projects will include working from a self-paced modular learning workbook of beginner to moderate pasteup projects, mostly technical, with minimal creativity. These projects heavily stress accurate detailing on all uses of type, measuring, and following specific pasteup procedures. Students are required to purchase a list of supplies which can be used in other graphic arts courses. **PREREQUISITE:** None.

Offered Fall Semester

GA 131 — PRINTING TECHNOLOGY

3 credits

This basic core course is designed to introduce students to the printing industry. Through a series of lectures the story of printing and communications is told chronologically from man's first attempts at communication through the development of mass communication pending systems, to a vision of what the world of printing might be like in the future. Assignments are designed to challenge the student's logical understanding of the purpose of mass communications through various printing processes in today's society. **PREREQUISITE:** MM 078 level or permission of instructor.

Offered Fall Semester

GA 145 — INTRODUCTION TO THE GRAPHIC ARTS COMPUTER

3 credits

This lecture and laboratory course will introduce students to the graphic arts computer, particularly the Macintosh. Students will learn basic computer functions used in all graphic arts applications, such as mouse skills, reading and selecting from the menus, graphic user interface, disk and filing operations, and printing files. Students will become familiar with today's popular graphics software, such as word processing, desktop publishing, drawing and painting, and photo manipulation. The class will receive individualized instruction in the laboratory groups. **PREREQUISITE:** None.

Offered Fall Semester

GA 211 — BASIC IMAGE ASSEMBLY

2 credits

This basic course is a lecture and laboratory presentation, with the purpose of preparing the student to precisely position film negatives onto a base material for the eventual conversion into a printing image carrier. The lecture portion will include the basic requirements of reproduction, the equipment where this reproduction will take place, the requirements of this reproduction equipment, materials and techniques used in the process, combined with a rigid adherence to precise measurement and positioning. The laboratory portion will start with the basics of image assembly and become increasingly more sophisticated and demanding, preparing students for employment as entry level assemblers ("strippers" as they are called in the industry). **PREREQUISITE:** None.

Offered Spring Semester

GA 220 — LAYOUT

3 credits

This course is a continuation of all uses of type and pasteup methods from GA 120. It is designed to introduce the elements of type, layout, and artwork from the past masters to their importance in today's modern visual communication, especially advertising. Students will study the origins of layout through various successes and failures of famous artists, designers, architects, and inventors, and will acquire knowledge of recognizing good design through the coinciding class assignments. Basic layout and pasteup procedures and the uses of various graphic arts tools and materials will be covered. Projects will include moderately creative layouts and accurate detailing on all uses of type, layout, artwork, and pasteup methods. Students will need the same list of supplies purchased for GA 120. **PREREQUISITE:** GA 120.

Offered Spring Semester

GRAPHIC ARTS TECHNOLOGY

GA 241 — DESKTOP PUBLISHING TYPOGRAPHY

2 credits

This course is a lecture and laboratory course which will introduce the student to the setting of type on the desktop computer with the current programs used in the industry. It will emphasize the integration of type into the design as well as the controls that the typesetter has over the process. On completion of this course, the student will have developed the basic skills required to effectively set type with most of the desktop equipment used in the industry. **PREREQUISITE:** GA 145.

Offered Spring Semester

GA 321 — ADVANCED IMAGE ASSEMBLY

2 credits

Advanced Image Assembly is a lecture and laboratory course which completes the two-course series on pre-press image preparation, commonly known in the industry as "stripping". The lecture portion of the course will provide a theoretical foundation for the sophisticated and complex techniques involved in contemporary image assembly. The subject matter discussed in lecture will cover a detailed examination of press and bindery requirements, an in-depth survey of tools and materials, and a comprehensive study of photographic and electronic procedures. The laboratory portion of the course will be comprised of increasingly more difficult and complex assignments ranging from simple color image assembly to multiple complementary imaging; from simple trapping techniques to "fake" color separation. **PREREQUISITE:** GA 211.

Offered Fall Semester

GA 350 — GRAPHIC DESIGN

3 credits

Graphic Design introduces the coordination of all the elements affecting advertising, utilizing students' creativity in completing advanced mechanical preparation methods. Students gain further knowledge in type, layout, artwork, photos, color printing systems, and other pasteup procedures that serve as a preview for the client and a guide for the illustrator, computer typesetter, camera operator, and printer. The lab portion of this course will acquaint students with the progression from concept to comprehensives to mechanical preparation for publishing, including basic photography techniques, and the relative importance of how all the elements are specified in order to produce multi-color camera-ready mechanicals for advertising and printing. Students will begin to assemble an individual final portfolio presentation suitable for professional graphic arts employment. **PREREQUISITES:** GA 120 and GA 220.

Offered Fall Semester

GA 360 — OFFSET PRESSWORK

3 credits

This course will familiarize the student with the theory and operation of the offset lithographic printing press. The technical components of these presses will be detailed emphasizing the advantages and limitations of the process, enabling the student to maximize and enhance his or her design capabilities. Printing substrates will be presented in detail along with color matching systems. Laboratory exercises will familiarize the student with the operation of small offset duplicators and larger offset presses.

Offered Fall Semester

GA 371 — PRINTSHOP MANAGEMENT

3 credits

This course will provide an introduction to the student of the management functions of the graphic arts industry. The principles of controlling finances, personnel, costs, purchasing, inventory, production, and growth will be stressed. The case study approach will be used to reinforce the theories presented in the classroom, building a framework to aid in making the many decisions which are the essence of good graphic arts management procedures. **PREREQUISITE:** GA 131.

Offered Fall Semester

GA 380 — CHEMISTRY OF LITHOGRAPHY 1

3 credits

This course is a study of the fundamental principles of chemistry in relation to the properties, composition, and structure of matter; the changes that matter undergoes; and the laws governing the changes. Theories of chemical reactions, chemical bonding, and molecular structure are covered. These topics will prepare the student for the advanced work and practical application of chemistry in the following course in this sequence, GA 411. This course meets for lecture three hours a week. **PREREQUISITE:** MM 091.

Offered Fall Semester

GA 397 — GRAPHIC ARTS COOPERATIVE EDUCATION

3 credits

Graphic Arts Cooperative Education is a course which enables students to achieve work experience in assignments which are directly related to their major field of study. It provides valuable first-hand experience in the field, wages earned to defray most college expenses, and work experience to give participating students "paid experience" references for future employment opportunities. **PREREQUISITE:** Senior Standing; GA 120, GA 211, and GA 220.

GA 411 — CHEMISTRY OF LITHOGRAPHY 2

3 credits

This is the final part of a two-semester sequence of courses dealing with the chemical foundations of the lithographic printing process. Topics include the chemistry of light sensitive coatings, inks, fountain solutions, ink attracting/ink repelling surfaces, and paper. The course will also discuss both the environmental and safety issues involving pressroom chemicals. The course meets twice a week for lecture and once a week for laboratory experience. **PREREQUISITE:** GA 380 or any college-level chemistry course.

Offered Spring Semester

GA 420 — COLOR REPRODUCTION PROCESSES

3 credits

This is a lecture and laboratory course which will discuss the reproduction of color with graphic arts processes. As a majority of contemporary printing is now in full color, it is very important that the graphic arts professional have a good theoretical and practical understanding of color reproduction. The course will begin with a review of light and color, and proceed through contemporary color processes. Among the topics discussed are color standardization, color viewing, quality evaluation, proofing, electronic separation techniques, inks, and printing requirements. **PREREQUISITES:** MP 255, GA 150 or permission of instructor.

Offered Spring Semester

GA 422 — PREPRESS IMAGING

3 credits

This is a course on the imaging technology required for printing preparation. It ranges in scope from most basic line images through the most complex halftone conversion of continuous tone materials. The topics discussed will include densitometry, photographic processes, scanner technology, electronic output devices, multi-impression halftones, color separations, and printing image requirements. This course will emphasize quality evaluation and the relationship between the prepress image and the final press printed image. The course is organized into both lectures where the theories of prepress imaging are discussed, and laboratory sessions where experiments and demonstrations of practical applications are experienced. The aim of this course is to provide students with a working knowledge of the materials, processes, production techniques, and methods of evaluation for preparation of press printed images. **PREREQUISITES:** MP 255, GA 150, or permission of instructor.

Offered Spring Semester

GRAPHIC ARTS TECHNOLOGY

GA 445 — COMPUTERIZED GRAPHIC DESIGN

3 credits

Computerized Graphic Design is the cumulative commercial art course in the Graphic Arts Technology program. This lecture and laboratory course is a continuation, on an advanced level, of many of the skills developed in previous commercial art courses, including typesetting commands, layout, mechanical preparation, and computerized desktop publishing and multimedia on the Macintosh computer. This course progresses in technical skills covered in GA 350 through advanced computer methods using current design, imaging, and multimedia software. Software includes several popular desktop publishing, drawing/painting, multimedia and scanning programs. Students will also learn background information about the Macintosh computer and peripherals. Laboratory instruction will begin with self-paced tutorials; continue into start-to-finish projects for multi-paged, multi-colored design jobs; and progress to the uses of multimedia in advertising. Students continue to assemble individual final portfolio presentations suitable for professional graphic arts employment.

Offered Spring Semester

GA 455 — MACINTOSH OPERATING SYSTEMS

3 credits

Since the Apple Macintosh computer has become the staple "tool" for electronic prepress, the knowledge of the proper operating and maintenance procedures has become essential for all graphic arts professionals using this platform. This hands-on lecture course explores system software basics through custom configuration, including disk and hard drive management, menus and hierarchies, System Folder and Finder, microprocessors and memory, loading and updating software, font storage, file formats, multitasking, third party utilities and extension conflicts, interfacing and inter-application communication, emulation, file sharing and networking, connecting peripherals, troubleshooting, and compatibility of popular software and hardware used in today's graphic arts industry. **PREREQUISITE:** GA 145, BD 196 or permission of instructor.

Offered Fall and Spring Semesters

GA 461 — ADVANCED DESKTOP PUBLISHING

3 credits

This is a lecture and laboratory course which is designed to develop advanced skills and productivity with the current computer programs used in the graphic arts industry. The techniques that will be discussed will include the steps in producing a project, organization and planning techniques, and the combining of computer hardware and software. The laboratory portion of this course will have many projects to develop a sense of workmanship. **PREREQUISITE:** GA 241.

Offered Spring Semester

GA 497 — GRAPHIC ARTS COOPERATIVE EDUCATION

3 credits

Graphic Arts Cooperative Education is a course which enables students to achieve work experience in assignments which are directly related to their major field of study. It provides valuable first-hand experience in the field, wages earned to defray most college expenses, and work experience to give participating students "paid experience" reference for future employment opportunities. **PREREQUISITES:** Senior Standing; GA 120, GA 211, and GA 220.

Offered Spring Semester.

Health Careers Community

AK 099, AK 099L — HEALTH DIRECTIONS SEMINAR 1

4 credits

The Health Directions Seminar 1 is designed as a developmental course for students planning to enter an allied health career. Using basic concepts of health and wellness as a focus, students will develop and strengthen study skills necessary for success in the higher level allied health courses. Weekly lessons in medical terminology will

assist students to develop and improve their medical vocabulary. In addition, the weekly laboratory component of this course provides the student an opportunity for career exploration. All of the allied health career programs are introduced and explored in detail. This course utilizes a multimedia approach to learning. A variety of computer-driven audio and visual tools (cassettes, video tapes, and laser discs) will enhance the traditional lecture experience. Class discussion and small group participation are an integral part of this course.

AK 104 — HEALTH DIRECTIONS PRACTICUM

3 credits

This course is designed for Pre-Health students who need in-depth career exploration. Planned observations in the 12 allied health programs, individual meetings with the instructor, and a research paper provide the student with the information necessary to choose his or her career direction. The observations will be within the laboratories of STCC health programs and affiliated health care facilities. This course meets by arrangement.

AK 105 — HEALTH DIRECTIONS SEMINAR 2

3 credits

Health Directions Seminar 2 is designed to introduce students to basic concepts of pathophysiology. Emphasis is placed on medical terminology for basic structures and functions of each of the body systems. This course utilizes a multimedia approach to learning. A variety of computer-driven audio and visual tools will enhance the traditional lecture experience.

History

NH 100 — SURVEY OF EARLY WESTERN CIVILIZATION

3 credits

Origin and development of Western Civilization beginning with the classical civilizations of Greece and Rome, continuing through early Christianity and the Middle Ages, and concluding with the Renaissance and Reformation.

Offered Fall and Spring Semesters

NH 110 — SURVEY OF EARLY U.S. HISTORY

3 credits

History of the United States from the Colonial period to the end of the Civil War and Reconstruction. A topical approach is followed within a chronological framework centering on the colonial origins of American society, its separation from England, the subsequent process of nation building and the development of the Civil War during the Ante-Bellum period.

Offered Fall and Spring Semesters

NH 200 — SURVEY OF MODERN WESTERN CIVILIZATION

3 credits

Modern Western Civilization from the end of the Middle Ages to the present. Begins with Seventeenth Century Europe and discusses the beginnings of modern science; the Enlightenment and the political revolutions in England, America, and France; the industrial and intellectual revolutions of the Nineteenth Century; the World Wars of the Twentieth Century and developments which follow in the post-war period. PREREQUISITE: None. Honors component available.

Offered Fall and Spring Semesters

NH 210 — SURVEY OF MODERN U.S. HISTORY

3 credits

History of the United States from the end of the Reconstruction period to the present. Consideration will be given to the impact of the Industrial Revolution on Late Nineteenth Century America and the influence of war and reform on the nation during the Twentieth Century. A social cultural and new political approach will be utilized. PREREQUISITE: None.

Offered Fall and Spring Semester

HISTORY

NH 300 — HISTORY OF CIVILIZATION TO 1650

3 credits

This course follows the development of China, Japan, India, Africa, Eastern Europe, and South America from the Stone Age to 1650. It will examine scientific, economic, social, and cultural trends, with particular emphasis on the influence of religion and philosophy that is not based on the Judeo-Christian ethic.

NH 322 — INTRODUCTION TO AFRICAN-AMERICAN HISTORY: COLONIAL TO 1865

3 credits

The purpose of the course is to introduce the student to the history of the Afro-American in the United States. Beginning with an exploration of the African heritage, the course will explore the social, economic, and political role of Afro-Americans from the colonial period through 1865. The course will also examine the development of black culture in the United States, the diversity of this culture, and its contribution to American culture in general.

NH 323 — INTRODUCTION TO AFRICAN AMERICAN HISTORY: 1865 - PRESENT

3 credits

The purpose of the course is to introduce the student to the history of the Afro-American in the United States. Beginning with an exploration of the African heritage, the course will explore the social, economic, and political role of Afro-Americans from 1865 through the Civil Rights movement of the 1960s. The course will also examine the development of black culture in the United States, the diversity of this culture, and its contribution to American culture in general.

Offered Spring Semester

NH 400 — HISTORY OF CIVILIZATION SINCE 1650

3 credits

This course follows the development of China, Japan, India, Africa, Eastern Europe, and South America from 1650 to the present. It examines scientific, economic, social, and cultural trends with particular emphasis on the influence of religion and philosophy that is not based on the Judeo-Christian ethic.

NH 425 — WOMEN IN HISTORY

3 credits

This course will trace the history of women in America. It will focus on their economic, political, and social roles, as America moved from being an agrarian society to an industrial one. The course will also examine the historical role of women after World War I, and the influence of the civil rights movement on the late 20th century women's movement. Primary sources will be used in this course. **PREREQUISITE:** None.

NH 440 — CHINESE CIVILIZATION

3 credits

This course will consider modern China in the perspective of its ancient traditions. It will present the traditional world view, philosophical rather than religious, as well as Confucianism, Taoism, and Buddhism. It will consider enough history and geography to orient students to the great mystery of Chinese civilization. It will also attempt to make clear some of the challenges like population growth and pollution that confront the entire world, but that confront China inescapably today.

NH 900 — DIRECTED STUDY IN HISTORY

variable credit

Semester hours credit will vary from one to three, depending upon the written, agreed-upon, approved, student-professor contract.

Honors Colloquia

LH 501 — HUMANITIES COLLOQUIUM: ARTS IN ACTION

3 credits

The Arts in Action colloquium is designed to illustrate to the student how the arts contribute *actively* to our daily lives, how they give us a sense of our past, how they provide us with an enlightened sense of self, and how they enable us to understand

the ongoing complexities of the human condition. This colloquium will focus on such areas as: theater, music, dance, painting, and sculpture. Ideally, the Arts in Action colloquium will blend in-class lectures, readings, slides, tapes, and films with actual attendance at artistic events in the surrounding communities.

Offered Spring Semester

LH 502 — LIBRARY RESEARCH COLLOQUIUM

1 credit

A one-credit course designed for honors students to explore methods and means of finding information. There will be individual and group projects covering many subjects and sources, and concentrating on locating specific data and on conducting in-depth research. Students will learn how knowledge is organized, what kind of information is available in a library (and what is not), how to find the information and, once found, what to do with it. This course will combine elements of a treasure hunt and a mystery story, and will require curiosity, persistence, and a sense of humor.

Offered Fall Semester

LX 501 — HUMANITIES COLLOQUIUM: ETHICS IN SOCIETY

3 credits

This course, an honors seminar, will consider the practical and societal applications of classical ethics. Students will read, think, argue, and try to understand some of the moral issues of our times. Outside speakers in medicine, law, and social services will be invited to lead discussions on ethics in their fields.

Offered Spring Semester

MG 501 — SCIENCE COLLOQUIUM:

FROM STAR GAZERS TO STAR WARS

3 credits

The science colloquium will focus on historical trends in science, great thinkers in the world of science, and science and technology in the modern age. Supplementary sources such as *The Ascent of Man*, *Connections*, Carl Sagan, and *Nova* may be used. An integral component of this colloquium will be the use of logic, critical thinking, analytical thinking, and data collection and analysis. Students will be encouraged to become involved in their own original research projects.

Offered Fall Semester

NG 500 — SOCIAL SCIENCE COLLOQUIUM: SELF AND SOCIETY

3 credits

This interdisciplinary honors colloquium will focus on the individual within both a contemporary and historical context. Biography will serve as our unifying conceptual tool. A major theme will be how the individual shapes society, and conversely how society shapes the individual. A cross-cultural approach will be employed, although figures from the American experience will have a greater emphasis. Representative people will include men and women from diverse ethnic, racial, and social class backgrounds.

Offered Fall Semester

**NG 501 — SOCIAL SCIENCE COLLOQUIUM: HEROES AND VILLAINS -
MAKERS OF THE MODERN WORLD**

3 credits

This is an interdisciplinary social science course with a historical and biographical focus. "Modern" is defined as circa 1815 to the present. We will study the famous, infamous, and obscure. Women and men from the American experience will play a central role, but not to the exclusion of pivotal figures from around the globe. Political matters often dominate, yet social, intellectual and cultural aspects – both elite and popular – will also receive due attention.

Humanities
(See Art, English, Foreign Languages,
Music, Philosophy)

Landscape Design and Management Technology

GL 111 — TREES IN THE LANDSCAPE

4 credits

A course dealing in tree identification and use, as related to landscape work. Important types, both native and introduced, are discussed. Limited to trees generally hardy in the New England area. Representative types are discussed during laboratory sessions. Lectures deal with general topics concerning tree use. Field trips, both on and off campus, are used to view the trees discussed. Three one-hour lectures, and three one-hour labs.

Offered Fall Semester

GL 120 — PRINCIPLES OF HORTICULTURE

3 credits

A basic course in general horticulture, introducing the student to the fundamentals of soil study and use, insect and disease control and plant production techniques. The lectures cover the theoretical aspects of horticulture and the laboratories are used for field trips to horticultural businesses that employ graduates, and practical work. Two one-hour lectures, one three-hour lab.

Offered Fall Semester

GL 210 — PRESENTATION TECHNIQUES

3 credits

A course in mechanical drafting, stressing the media and techniques commonly used in the preparation of landscape plans. The use of instruments, lettering and line techniques is covered first, followed by the development of isometric and perspective drawings. Working in three-dimensions is stressed, so that the student may best visualize spatial relationships in future landscape design courses. Three two-hour labs.

Offered Spring Semester

GL 220 — TURF MANAGEMENT

3 credits

The study and identification of turf grasses as used in the New England area. Much emphasis is placed upon the best use of the types involved. Topics in the lectures include soil and fertilization requirements, drainage and irrigation, best turf types, grass and seed identification, maintenance and renovation, and disease and insect control. The laboratories are involved in soil testing, turf growing, maintenance techniques and field trips. Two hour lecture, one three-hour lab.

Offered Spring Semester

GL 311 — SHRUBS IN THE LANDSCAPE

4 credits

A continuation of GL 111, covering the identification and use of the commonly used native and introduced shrubs and vines in this area. Emphasis is placed upon the best use of the types involved. Lectures are concerned with utilization of plant features such as flowers and fruits and with effects of the environment on the plants discussed. Laboratories are used for the discussion of specific plants. Three one-hour lectures and three one-hour labs.

Offered Fall Semester

LANDSCAPE DESIGN AND MANAGEMENT TECHNOLOGY

GL 320 — LANDSCAPE PRACTICES

3 credits

A course dealing with the basic aspects of operating and scheduling a typical landscaping business through the year. Students will be concerned with operations through the seasons of the year, and with practices such as purchasing, scheduling of work operations, and yearly grounds maintenance practices. Two one-hour lectures, one three-hour lab.

Offered Fall Semester

GL 330 — LANDSCAPE DESIGN 1

3 credits

A course in the residential landscape design stressing basic design techniques and elements. Topics covered in lecture are line, shape, form, texture, pattern, color, the processes of design, the development of outdoor spaces and design presentation. Design problems in lab deal with entry ways, driveways, outdoor living areas, play areas, private gardens and the orientation of structures on the site. **PREREQUISITE:** GL 210. One one-hour lecture; two two-hour labs.

Offered Fall Semester

GL 350 — LANDSCAPE OPERATIONS (PLANTING)

3 credits

This course deals with the principles involved in estimating, carrying out and maintaining landscape work. The lectures are used to introduce and discuss the work areas involved and laboratory time is spent in moving and planting trees and shrubs, estimating work and the use of work. Two hour lecture, one three-hour laboratory.

Offered Fall Semester

GL 410 — PLANT PROPAGATION

3 credits

A course dealing with the procedures used in propagating and growing plant materials. Lectures deal with the theoretical aspects of growing and the laboratories are devoted to greenhouse and field work. Several field trips are taken to commercial nursery operations in the area. Two-hour lecture, one three-hour lab.

Offered Spring Semester

GL 420 — LANDSCAPE DESIGN 2

3 credits

A continuation of Landscape Design 1 stressing presentation and analysis. The areas dealt with are urban shopping and business spaces, small office buildings, schools and playgrounds, and parking areas. **PREREQUISITE:** GL 330. One one-hour lecture, two two-hour labs.

Offered Spring Semester

GL 431 — EARTH FORMS & STRUCTURES

4 credits

A study of the equipment, materials and methods used in constructing landscape features such as walls, walks, drives, fences and terraces. Considerable field work is involved, in which the students lay out and construct features as mentioned above. Three one-hour lectures, one three-hour laboratory. **PREREQUISITE:** GL 330.

Offered Spring Semester

GL 450 — ENTOMOLOGY/DISEASE CONTROL

3 credits

This course serves as an introduction to the study of insects, diseases, and weeds that affect the growth of ornamental plants in the New England area. Both the identification and control of the most common plant pests will be discussed. Control by cultural and biological methods, rather than the use of chemicals, will be stressed, but the realistic need for chemical control and the safe use of chemicals will also be a part of the course. Preparation for taking the state pesticide licensing examination will be a part of the course. Two one-hour lectures and one three-hour lab. **PREREQUISITE:** None.

Offered Spring Semester

Laser Electro-Optics Technology

EL 090 — LASER SAFETY

1 credit

This is a *mandatory* course for students in the LEOT program. The course deals with the subject of laser safety and the various government regulations concerning the different classes of lasers. The student is required to complete this course and pass a written examination before he or she may participate in any laboratory classes in the LEOT program. PREREQUISITE: None.

Offered Spring Semester

EL 320 — INTRODUCTION TO LASERS

4 credits

This course is made up of three one-hour lecture sessions and a three-hour laboratory session. The course begins with an introduction to light, the atom, emission processes, and simulated emission of radiation. Next, laser output characteristics and modification, materials components and industrial laser types are discussed in detail. Finally, a description of major industrial laser applications is given. Safety and laboratory procedures are also covered. The lab section will loosely follow the lectures and some projects are constructed. Senior standing.

Offered Fall Semester

EL 325 — LASER ELECTRONICS

4 credits

This course deals with the practical applications of linear electronic devices and circuits to the operation and control of laser systems. Topics will include high voltage power supplies, normal and switching supplies, diode laser power supplies, control interlocks, high voltage design considerations, and high voltage safety. Laboratory included. PREREQUISITES: ET 130, ET 230 or ET 110, ET 115, ET 210, ET 215.

Offered Fall Semester

EL 330 — GEOMETRICAL OPTICS

4 credits

This course is the first of a two-semester sequence covering basic optical theory and components. Each course consists of three one-hour lecture sessions and a three-hour lab. Geometrical optics deals with the rectilinear propagation of light and the elementary treatment of image formation, lenses, mirrors, prisms, fiber optics, ray tracing, aberrations, optical system design, and optical instruments. The laboratory section parallels the lectures and familiarizes the student with optical laboratory components and procedures. PREREQUISITE: Senior standing.

Offered Fall Semester

EL 335 — DATA ACQUISITION AND CONTROL

3 credits

This course is an introduction to computer data acquisition and the computer control of laboratory equipment. Data acquisition topics include analog to digital conversion, sampling and nyquist theory, sampling errors, data rate predictions, triggering conditions, and data reduction. Control topics include pid loops, digital to analog conversion, stepper motor theory, and typical sensor systems. Topics may vary depending on the availability of lab equipment and the abilities of the students. PREREQUISITES: ET 235 Digital Systems and senior standing in LEOT or permission of the instructor.

Offered Fall Semester

EL 345 — PHOTONICS

4 credits

This course deals with the applications of linear integrated circuits to semiconductor lasers and integrated optical devices. Topics to be covered will include laser diode driver and detector circuits, photodiodes and phototransistors, integrated amplifiers, RF modulators, normal and switching power supplies. Lab included. PREREQUISITE: Senior standing in LEOT or permission of instructor.

Offered Fall Semester

EL 348 — OPTICAL COMMUNICATIONS

3 credits

This course will present the principles and techniques associated with the transmission of optical radiation in waveguides (fibers) and the free space, optical sources, and modulation techniques. Homodyne and heterodyne detection will be discussed, as well as the design considerations for optical communications systems. **PREREQUISITE:** Senior standing in LEOT or permission of instructor.

Offered Fall Semester

EL 350 — OPTICAL SYSTEM DESIGN

3 credits

This course deals with the system configuration and design of optical systems. Various types of lenses, mirrors, and catoptric, dioptric and catadioptric systems will be covered, as well as holographic optical elements, image evaluation, OTF and MTF analysis. **PREREQUISITE:** Senior standing in LEOT or permission of instructor.

Offered Fall Semester

EL 352 — OPTICAL TEST AND MEASUREMENT

4 credits

This course will provide the student with a working knowledge of the various devices and techniques used for evaluating optical systems. Topics will include the applications and use of spectrometers, monochromators, spectrophotometers, and Michelson, Fabry-Perot, Twyman-Green, and Mach-Zender interferometers. Spatial resolution of optical systems. Lab included. **PREREQUISITE:** Senior standing in LEOT or permission of instructor.

Offered Fall Semester

EL 412 — LASER ELECTRO-OPTICS PROJECTS

3 credits

This course deals with the electro-optic devices which are used in various optical and electronic devices. Some of the topics covered include: radiometry, photometry, photodetectors, thermal detectors, PN junction detectors, display devices, and opto-isolators. The laboratory allows the students to build and test electro-optic based projects. **PREREQUISITE:** Senior standing in LEOT or permission of instructor.

Offered Spring Semester

EL 415 — LASER SYSTEMS

4 credits

This course provides an in-depth analysis of the various types of laser systems in use today. Among the laser systems to be studied are semiconductor lasers, solid-state lasers, ion lasers, molecular and dye lasers, excimer lasers, free electron lasers, and others. Lab included. **PREREQUISITE:** Senior standing in LEOT or permission of instructor.

Offered Spring Semester

EL 420 — WAVE OPTICS

4 credits

Three major topics are studied in this course: wave optics, properties of light and matter, and the optics of transformations. The majority of the course is dedicated to wave optics and the study of diffraction and interference. In dealing with the properties of light and matter, polarization and optical boundaries are discussed. The optics of transformations deals with Fourier transform spectroscopy, transfer functions, optical data processing, and holography. Laboratory exercises will closely parallel classroom discussions and should help bridge the gap between theory and practical use of the concepts expressed. Senior standing and EL 320, EL 330. Honors component available.

Offered Spring Semester

LASER ELECTRO-OPTICS TECHNOLOGY

EL 425 — INDUSTRIAL LASER APPLICATIONS

4 credits

This course deals with the applications of lasers in industry. Among the many different uses of lasers to be studied are laser welding and surface treatment, material removal, laser marking and etching, non-destructive testing, distance measurement, lasers in medicine and surgery, lasers in construction, spectroscopy, communications and others. Lab included. **PREREQUISITE:** Senior standing in LEOT or permission of instructor.

Offered Spring Semester

EL 435 — FIBER/INTEGRATED OPTICS

4 credits

This course will discuss elements of fiber and integrated optics including: fiber optic components and systems, waveguide transmission, fiber optic sensors, integrated optics, and optical circuitry. Also included will be fiber splicing, coupling, and measurements. Lab Included. **PREREQUISITE:** Senior standing in LEOT or permission of instructor.

Offered Spring Semester

EL 438 — OPTOELECTRONICS

4 credits

This course offers a detailed discussion of optoelectronic fundamentals. Subjects to be covered include: radiation and radiometry, photometry, phototransistors, photoresistors, optoisolators, detectors, semiconductor lasers, display devices, and optical waveguide. Lab included. **PREREQUISITE:** Senior standing in LEOT or permission of instructor.

Offered Spring Semester

EL 440 — VACUUM THIN FILM DEPOSITION

4 credits

This course exposes the student to the theory and applications of dielectric thin film in optics. Topics covered include optical materials, design and analysis of multilayer dielectric coatings, optical filters, and vacuum deposition systems. **PREREQUISITE:** Senior standing in LEOT or permission of instructor.

Offered Spring Semester

EL 442 — OPTICAL COMPONENT FABRICATION AND ASSEMBLY

4 credits

This course deals with the opto-mechanical aspects of optical systems. Topics include processes in the design and mounting of optical components, specifications, constraints and tolerances, materials and substructures, environmental influences, experimental modeling and system evaluation. Lab included. **PREREQUISITE:** Senior standing in LEOT or permission of instructor.

Offered Spring Semester

Law Enforcement/Criminal Justice

NL 100 — CRIMINAL PROCEDURES 1

3 credits

To familiarize the student planning a career in law enforcement with the constitutional requirements and safeguards attendant throughout the criminal process, from investigation through arrest, interrogation, indictment, trial, and sentencing. Included is an in-depth review of the bill of rights and its influence in modern society. Heavy emphasis is placed on actual case study and review of recent Supreme Court decisions, especially as related to practical situations and problems confronting law enforcement personnel. Selected readings focus on practical application of constitutional principles to practical situations.

Offered Fall Semester

LAW ENFORCEMENT/CRIMINAL JUSTICE

NL 110 — INTRODUCTION TO CRIMINAL JUSTICE

3 credits

An introduction and basic survey of criminal justice and the court systems, both state and federal. The course explores the concept of bail, the functions and roles of the judge, prosecutor, grand jury, defense attorney, and public defenders, and sentencing in the courts. Also examined are the functions and objectives of the probation officer and parole officer, especially as related to rehabilitation of the offender. The role of the policeman in modern society is discussed and explored in detail.

Offered Fall Semester

NL 200 — CRIMINAL PROCEDURES 2

3 credits

Continuation of Criminal Procedures 1 NL 100. PREREQUISITE: Criminal Procedures 1 NL 100.

Offered Spring Semester

NL 230 — CRIMINAL EVIDENCE

3 credits

An analytical study of the rules of evidence, including such general areas of relevancy and materiality, hearsay evidence, introduction of writings, competency and privilege, and parole evidence rule. Probative matter legally presented at the trial of a criminal case is given special attention. Also examined are rules concerning the admission of evidence in such specific areas as search and seizure, pre-trial identification, admission of confessions, electronic surveillance, presumptions and privileges. PREREQUISITES: Intro. to Criminal Justice NL 110 or permission of Department Chairperson.

Offered Spring Semester

NL 300 — CRIMINAL LAW 1

3 credits

This course explores and examines the substantive law of crimes, including the general and special areas of criminal laws. Of special interest is a survey of crimes against the person, crimes against property, parties to crimes, defenses based on justification, and the nature of the criminal act and conduct. Emphasis is placed on analysis of elements of particular crimes, offenses, and punishments through an examination of the statutes and case example. PREREQUISITE: NL 100, NL 110, and NL 200 or permission of the Department Chairperson.

Offered Fall Semester

NL 340 — CRIMINAL INVESTIGATION

3 credits

An introduction to field investigation, including conduct at the scene of the crime, interviewing and interrogation of witnesses and suspects, the use of informants, and techniques of surveillance. Emphasis is placed on special investigative techniques and on court procedures of the police case.

Offered Fall Semester

NL 400 — CRIMINAL LAW 2

3 credits

Continuation of Criminal Law 1 NL 300 PREREQUISITES: Criminal Law 1 NL 300 and Intro. to Criminal Justice NL 110 or permission of Department Chairperson.

Offered Spring Semester

NL 405 — CURRENT ISSUES IN LAW ENFORCEMENT

3 credits

This course explores current issues in the field of law enforcement and corrections. Included as major topics to be studied are the causes, effects, and treatment of drug addiction in society, the correctional system generally in America, work release programs, prisoners' rights, women's rights, the philosophy of the juvenile justice system, victimology, crime in the society, and a discussion of rehabilitation and reintroduction of the offender in contemporary society. These issues will be explored from the perspective of the social sciences and their sociological context.

LAW ENFORCEMENT/CRIMINAL JUSTICE

NL 411 — JUVENILE PROCEDURES

3 credits

This course examines the role of the police in delinquency prevention and the make-up of youth service division within the police department. Emphasis is on theory, administration, control, treatment, confinement, community resources, relationships with the public and the juvenile court.

NL 413 — PAROLE, PROBATION AND REHABILITATION

3 credits

This course familiarizes the student planning a career in law enforcement with laws, rules, and regulations attendant with probation and parole and corrections, as well as with the basic concepts and mechanics of each. The course also examines the organizational structure of probation, the parole board, and the Department of Correction in Massachusetts. Theories employed in the sentencing and rehabilitation of different kinds of offenders will be studied, along with an analysis of rehabilitation of the offender in the community versus in penal institutions. Utilization and effectiveness of work-release programs, half-way houses and treatment centers for drug offenders and alcoholics will be considered.

NL 415 — POLICE/COMMUNITY RELATIONS

3 credits

This course will examine the relationship between police and the community they serve. This relationship has often been marked by hostility and lack of confidence in the police, particularly in minority group areas. How this hostility is reflected in day-to-day police operations, recruiting, morale and safety of the individual officer will be examined through the course readings, lectures and discussion. The response of police to these pressures will also be examined. The problem of police ethics and the role this plays in developing a police image in the community will be explored. What part police/press relations play in the development of police/community relations will be reviewed through actual police-related news stories. The ultimate question of freedom versus authority, of the police state versus constitutional democracy, will be examined in relationship to the course reading and discussions.

NL 450 — LAW ENFORCEMENT MANAGEMENT & PLANNING

3 credits

Consideration of police problems at the administrative level, including coordination of all branches of a police department. An evaluation of line, staff, and auxiliary functions and the interrelationship of each. The purpose, need, and scope of planning in the police operation, including staffing, correction of data and use of data processing.

Offered Spring Semester

NL 475 — LAW ENFORCEMENT SEMINAR

3 credits

This course reviews and correlates all major areas of study covered in the law enforcement/criminal justice curriculum. Through general discussion and selected readings, the course explores and re-examines all major areas in law enforcement with the aim of consolidating previously attained knowledge and skills. The course seeks to provide the student with a distinct perception, overview and evaluation of the criminal justice process, including the basic trial format and courtroom procedure.

Legal Office Administration
(See Office Administration)

Management
(See Business Administration)

Marketing
(See Business Administration)

Math and Natural Sciences
(See Engineering Transfer, Computer Science
Transfer, Biological Sciences,
Chemistry, Mathematics, Physics)

Mathematics

MM 071 — MATHEMATICS

1 credit

The concept of whole numbers and the place value system. Addition, subtraction, multiplication and division of whole numbers. Exponents, perfect square roots, primes, composites and prime factoring.

MM 072 — MATHEMATICS

1 credit

Fractions and decimals. Addition, subtraction, multiplication and division of both fractions and decimals. Reducing fractions and converting fractions to decimals. PREREQUISITE: MM 071 or its equivalent.

MM 073 — MATHEMATICS

1 credit

Changing percentage to fractions and fractions to percentage. The solution of the various types of percentage problems. An introduction to radicals. Perimeter and area of rectangles and circles. PREREQUISITE: MM 072 or its equivalent.

MM 074 — ARITMÉTICA BÁSICA BILINGÜE

3 créditos

Mismo contenido que el curso MM071, MM072, MM073. El concepto de los números enteros y del valor notacional. Suma, resta, multiplicación y división de números enteros. Exponentes, raíces cuadradas perfectas, números primarios y compuestos y factorización prima. Fracciones y decimales. Suma, resta, multiplicación y división de ambos fracciones y decimales. Cambiar por cientos a fracciones y fracciones a por cientos. Introducción a radicales. Perímetros y áreas de rectángulos y círculos. REQUISITO PREVIO: ninguno.

MM 075 — BASIC PRE-TECHNOLOGY MATHEMATICS

3 credits

This course is equivalent to the Basic Arithmetic course (MM 071, 072, 073) with technical applications. It is designed to prepare students in the following areas: positive and negative numbers, fractions, decimals, geometric figures, ratio and proportion, percents, areas and volumes, right triangles, basic equations. Three hours of lecture per week. PREREQUISITE: None.

MM 077 — MATHEMATICS FOR NURSING AND ALLIED HEALTH

1 credit

Using proportions to convert measures in metrics and apothecary system. Calculating drug doses not available in units prescribed. Calculating drug doses of extremely small units, insulin dosages, infant and child dosage. Preparing solutions from powders and liquids. PREREQUISITE: MM 100 to level 073, MM 078, MM 079 or math placement of MM 081.

MM 078 — MATHEMATICS

3 credits

Same course content as MM 071, MM 072, and MM 073, with the exception that this course is taught using a lecture rather than an audio-tutorial approach. PREREQUISITE: None.

MATHEMATICS

MM 079 — MATHEMATICS

4 credits

Topics include basic operations with whole numbers, fractions and decimals. Exponents, primes, composites, and percents are also covered. The course is composed of three hours of lecture and a three-hour computer laboratory in which practical applications are addressed.

MM 081 — MATHEMATICS

1 credit

Topics include a review of arithmetic, integers, and simplification of algebraic expressions. Solving linear equations and inequalities. PREREQUISITE: MM 073, MM 078, MM 079, or math placement of MM 081.

MM 082 — MATHEMATICS

1 credit

Topics include exponents and scientific notation, polynomials, operations with polynomials, and factoring trinomials. PREREQUISITE: MM 081.

MM 083 — MATHEMATICS

1 credit

Rational expressions and solving rational equations. Solving problems and proportions. A review of chapters 1-5. PREREQUISITE: MM 082.

MM 084 — ALGEBRA 1 ELEMENTAL BILINGÜE

3 créditos

Mismo contenido que el curso MM 081, MM 082, MM 083. Repaso de Aritmética, integrales, y simplificación de expresiones algebraicas. Resolviendo ecuaciones lineales y desigualdades. Exponentes y notación científica, polinomios, operaciones con polinomios y factorización de trinomios. Expresiones racionales y resolver expresiones racionales. REQUISITO PREVIO: MM074 o colocación en MM081.

MM 085 — MATEMATICAS

1 credito

Course contents same as MM 082. Suma, resta, multiplicacion & division de los numeros enteros. Simplificaciones de expresiones numerales conteniendo enteros, valores absolutos & exponentes. Simplificacion de expresiones variables. PREREQUISITO: MM 084 o su equivalente.

MM 086 — MATEMATICAS

1 credito

Course contents same as MM 083. Propiedades & axiomas de los numeros reales. Suma, resta, multiplicacion & division de expresiones fraccionales. PREREQUISITO: MM 085 o su equivalente.

MM 087 — LECTURE ELEMENTARY ALGEBRA 1

3 credits

This course is a lecture alternative to MM 081-MM 083. PREREQUISITES: MM 078, MM 079 or math placement of MM 081.

MM 091 — MATHEMATICS

1 credit

Topics include graphing linear equations and inequalities in one and two variables, slope, equations of lines, and systems of linear equations. PREREQUISITE: MM 083 or its equivalent.

MM 092 — MATHEMATICS

1 credit

Topics include roots, radicals, quadratic equations and applications, and parabolas. PREREQUISITE: MM 091.

MM 093 — MATHEMATICS

1 credit

Topics include a review of all material covered in MM 081-MM 083 and MM 091-MM 092. Completion of this module indicates the student is prepared to progress to pre-calculus (college level) mathematics. PREREQUISITE: MM 092 or its equivalent.

MM 094 — ALGEBRA 2 ELEMENTAL BILINGÜE

3 créditos

Mismo contenido que el curso MM 091, MM 092, MM 093. Gráfica de ecuaciones lineales y desigualdades de una y dos variables, inclinación, ecuaciones lineal y sistemas de ecuaciones lineales. Raíces, radicales, ecuaciones cuadráticas y sus aplicaciones, y parábolas. Repaso del material de MM 084. El cumplimiento de este curso indica que el estudiante está preparado para pasar a pre-cálculo (matemáticas a nivel universitario). REQUISITO PREVIO: MM 084 o colocación en MM 091.

MM 097 — LECTURE ELEMENTARY ALGEBRA 2

3 credits

This course is a lecture equivalent to MM 091-MM 093. PREREQUISITES: MM 083, MM 087 or math placement of MM 091.

MM 100 — MATHEMATICS

1-3 credits

There are 15 audio-tutorial mathematics classes in the MM 100 Mathematics series. They are:

MM 071	MM 081	MM 091	MM 101	MM 105
MM 072	MM 082	MM 092	MM 102	MM 106
MM 073	MM 083	MM 093	MM 103	MM 107

A complete description of these audio-tutorial mathematics courses is available in the "Student Information Booklet." Copies of this booklet are available without charge by writing to: Chairman, Mathematics Department, STCC, One Armory Square, Springfield, MA 01105.

MM 101 — MATHEMATICS

1 credit

Angles and their measure, Pythagorean theorem, right triangle trigonometry, laws of sines and cosines, vectors. PREREQUISITE: MM 093 or equivalent.

MM 102 — MATHEMATICS

1 credit

Introduction to sets, graphs and field properties, factoring, algebraic fractions, exponents and radicals. PREREQUISITE: MM 101.

MM 103 — MATHEMATICS

1 credit

Solution sets of linear and quadratic equations, relations and functions, both linear and quadratic. PREREQUISITE: MM 102.

MM 105 — MATHEMATICS

1 credit

Properties and applications of special functions and relations, conic sections, variation, inverse functions, exponential functions. PREREQUISITE: MM 103 or its equivalent.

MM 106 — MATHEMATICS

1 credit

Logarithms, solution of equations involving exponential expressions, radicals, and logarithms, binomial theorem, sequences and series. PREREQUISITE: MM 105.

MM 108 — MATHEMATICS

3 credits

Same course content as MM 105, MM 106, and MM 107, except courses are taught on a lecture basis rather than an audio-tutorial basis.

MM 115 — MATHEMATICS FOR TECHNOLOGY 1

4 credits

Topics include but are not limited to an introduction to graphing calculators, English and metric units, scientific notation, precision, accuracy, tolerance, powers and roots, evaluation and solution of formulas, linear equations, graphing data, nonlinear equations, right triangle trigonometry, and factoring. PREREQUISITE: MM 093.

Offered Fall Semester

MATHEMATICS

MM 116 — MATHEMATICS FOR TECHNOLOGY 2

4 credits

This course is a continuation of Mathematics for Technology 1. Topics include but are not limited to patterns and functions, quadratics, systems of equations, inequalities, introduction to computers: spreadsheets, databases, word processing, and graphics, statistics, probability, and quality assurance and process control. PREREQUISITE: MM 115.

Offered Spring Semester

MM 120 — CONTEMPORARY MATHEMATICS 1

3 credits

Problem solving. Hand Calculators. Metric System. Percents. Ratio and Proportion. Applications of Area and Volume, Pythagorean Theorem, Taxes, Credit, Installment Buying. PREREQUISITE: MM 083, MM 087 or math placement of MM 091.

MM 122 — APPLIED MATHEMATICS 1

3 credits

Topics include a review of algebra; linear equations and inequalities, matrices, systems of equations; linear programming; and probability. This course was previously called Finite Mathematics 1. PREREQUISITES: MM 093, MM 097 or math placement of MM 101.

Offered Fall and Spring Semesters

MM 124 — MATHEMATICS FOR A TECHNICAL SOCIETY 1

3 credits

This is the first course in a sequence designed to address the needs of a Liberal Arts/General Studies transfer student. This sequence stresses the connection between contemporary mathematics and modern society. Topics will be selected from the area of social choice, geometry, management science, probability and statistics, and computer science. PREREQUISITES: MM 093, MM 097 or math placement of MM 101.

MM 125 — MATHEMATICAL AND ALGEBRAIC FUNCTIONS

3 credits

An intermediate level course in algebra, including topics in factoring, exponential and radical manipulation, fractional equations, logarithms, geometric functions, and principles of graphing.

MM 132 — TECHNICAL MATHEMATICS 1

4 credits

Introduction to calculators, scientific notation, significant figures, functions and graphs, right triangle trigonometry, vectors, solution of linear and quadratic equations, systems of linear equations, determinants, factoring, algebraic functions, laws of sines and cosines, graphs of trigonometric functions, exponents and radicals. PREREQUISITE: MM 093, MM 097 or math placement of MM 101.

MM 137 — INDEPENDENT STUDY OF MATHEMATICS

1, 2, 3, or 4 credits

Independent study of special topics in mathematics under the direction of an instructor. PREREQUISITE: Permission of the Department Chairperson.

MM 140 — STATISTICS AND QUALITY CONTROL

3 credits

An introduction to statistical techniques and quality control procedures used in a clinical laboratory. The course addresses descriptive and inferential statistics, and covers hypothesis testing, confidence intervals, and statistical analysis of quality control charts. PREREQUISITES: MM 093 or MM 097 or mathematics placement of MM 101.

MM 142 — STATISTICS 1

3 credits

Descriptive methods of collecting, organizing, analyzing, and presenting categorical and numerical data. Elementary probability theory and distributions, basic components of sampling theory, estimation and hypothesis testing. PREREQUISITE: MM 093, MM 097 or math placement of MM 101.

MM 143 — BUSINESS STATISTICS

3 credits

An introduction to statistics and its role in managerial decision-making are studied. The course addresses the topics of: descriptive versus inferential statistics, constructing and interpreting frequency distributions, computing and interpreting measures of central tendency and dispersion, elementary probability concepts, and several probability distributions. **PREREQUISITE:** MM 093, MM 097, or math placement of MM 101.

MM 155 — CALCULUS 1

4 credits

The straight line; conic sections; inequalities; functions and graphs; limits and continuity; differentiation of algebraic functions; maxima/minima theory; related rates and differentials. Introduction to indefinite and definite integration of algebraic functions, arc length, volumes by disk and shell methods, surface of revolution, moments and centroids. Computer labs illustrating basic concepts are an essential part of the course. **PREREQUISITE:** MM 232 or MM 250.

**MM 157 — CALCULUS FOR BUSINESS, LIFE, AND
SOCIAL SCIENCES 1**

3 credits

Introduction to calculus with applications to business, life, and social sciences. Functions and graphs, limits, the derivative, techniques of differentiation, curve sketching, maximum/minimum problems, exponential and logarithmic functions, exponential growth and decay. **PREREQUISITES:** MM 097, MM 093 or placement at MM 101 or higher.

MM 222 — APPLIED MATHEMATICS 2

3 credits

Topics include limits; rates of change; differentiation of algebraic, logarithmic, and exponential functions; applications of the derivative; definite and indefinite integration; applications of the definite integral. This course was previously called Finite Mathematics 2. **PREREQUISITE:** MM 122.

Offered Fall and Spring Semesters

MM 224 — MATHEMATICS FOR A TECHNICAL SOCIETY 2

3 credits

This is the second course in sequence for the Liberal Arts/General Studies transfer student. Applications will be selected from the areas of social choice, probability and statistics, computer science, and management science. **PREREQUISITE:** MM 124.

MM 232 — TECHNICAL MATHEMATICS 2

4 credits

Complex numbers, logarithms, systems of nonlinear equations, inequalities, variation, progressions, trigonometric identities and equations, inverse trigonometric functions, analytical geometry, introduction to differential and integral calculus. **PREREQUISITE:** MM 132.

MM 237 — INDEPENDENT STUDY OF MATHEMATICS

1, 2, 3, or 4 credits

Continuation of MM 137. **PREREQUISITE:** MM 137, permission of the department chairperson.

MM 243 — BUSINESS STATISTICS 2

3 credits

This course is designed so that the student will gain proficiency in using statistical techniques as a decision-making tool in the major areas of business. Areas of emphasis are: statistical inference, variance, correlation and regression analysis, chi-square distribution, and non-parametric applications. **PREREQUISITE:** MM 143.

MM 255 — CALCULUS 2

4 credits

Differentiation and integration of transcendental functions; techniques of integration including trigonometric substitutions, integration by parts, methods of partial fractions and completing the square: hyperbolic functions, L'Hospital's Rule, improper integrals,

MATHEMATICS

infinite sequences and series, power series. Taylor series. Computer labs illustrating basic concepts are an essential part of the course. PREREQUISITE: MM 155 or its equivalent.

MM 257 — CALCULUS FOR BUSINESS, LIFE, AND SOCIAL SCIENCES 2

3 credits

Continuation of MM 157. Elementary techniques of integration, introduction to differential equations, applications to several mathematical models in business, life, and social sciences, and partial derivatives. PREREQUISITE: MM 157.

MM 355 — CALCULUS 3

4 credits

Topics include polar coordinates, multivariable calculus: 3-dimensional coordinate systems and surfaces from R_n to R_m ; limits and continuity; partial differentiation; chain rule; the gradient: directional derivatives; maxima and minima; multiple integration and applications; vector calculus: line integrals, surface integrals; Green's Theorem; Divergence Theorem; Stroke's Theorem. Computer labs illustrating basic concepts are an essential part of the course. PREREQUISITE: MM 255 or its equivalent.

MM 375 — DISCRETE MATHEMATICAL STRUCTURES 1

3 credits

Fundamentals of logic, set theory, relations, partially ordered sets, Boolean algebra, induction, recursion, algorithmic design, partitions, counting, permutations and combinations. PREREQUISITE: MM 255.

MM 439 — LINEAR ALGEBRA

3 credits

Geometric vectors; vector spaces, systems of linear equations; inner product spaces; linear transformations and matrices; determinants; eigenvalues and eigenvectors. PREREQUISITE: Calculus 2 MM 255 or permission of instructor.

MM 440 — LINEAR ALGEBRA LABORATORY

1 credit

This is a one semester hour computer laboratory in linear algebra utilizing on-campus computers and APL. PREREQUISITE: MM 255, COREQUISITE: MM 439.

MM 455 — DIFFERENTIAL EQUATIONS

4 credits

Classical methods of solution of first order and linear higher order ordinary differential equations. LaPlace Transform and Power Series solutions of linear ordinary differential equations. Matrix solutions to linear systems of ordinary differential equations. Numerical methods of solution of first order ordinary differential equations using the digital computer. Computer labs illustrating basic concepts are an essential part of the course. PREREQUISITE: MM 355 (or MM 255 with permission of instructor).

MM 475 — DISCRETE MATHEMATICAL STRUCTURES 2

3 credits

Trees and languages, semigroups and groups, finite-state machines, product and quotient groups, machines and regular languages, coding of binary information, and error detection are topics covered. PREREQUISITE: MM 375.

MN 100 — COMPUTERS AND SOCIETY

4 credits

This interdisciplinary science-sociology, lecture and laboratory course is designed to introduce the liberal arts student to the pervasive use of computers in today's world. In the laboratory, students will have hands-on experience with personal microcomputers. They will use not only languages, but word processing, file manipulation, music synthesis, and graphics. The lectures will explore the impact computers are exerting on our social institutions; the myriad ways computers are changing the ways we work and ultimately the way we think; and projections of changes computers are expected to bring to our professional and personal life styles.

Mechanical Engineering Technology

FA 112 — MACHINE TOOL TECHNIQUES I

3 credits

This course is designed to give an overview of the different manufacturing processes used today. Students will become familiar with the technical foundations of the industry. This lab-oriented course will require the completion of projects on various machine tools including vertical milling machines, engine lathes, and surface grinders. Cutting and non-cutting hand tools will be introduced along with dimensional measurement and layout equipment.

Offered Fall Semester

FA 211 — MACHINE TOOL TECHNIQUES 2

3 credits

This course is designed to build and expand upon the knowledge gained in the first semester. Students will learn the order of operations used in manufacturing. Students will demonstrate proficiency in the use of cut-off equipment, the Rockwell tester, vertical milling machines, engine lathes, surface grinders, heat treatment and surface treatment. Students will build projects applying knowledge that was learned in the lecture environment. **PREREQUISITE:** FA 112.

Offered Spring Semester

FA 235 — CNC PROGRAMMING

3 credits

This course is an introduction to the fundamental concepts of Computer Numerical Control (CNC). The impact of CNC on manufacturing and productivity is discussed. The emphasis of this course is to manually program different types of CNC systems in use today. Course content includes writing programs to perform three-axis hole and milling operations, along with turning and facing routines for a lathe. **PREREQUISITE:** FA 112.

Offered Spring Semester

FA 335 — COMPUTER-AIDED MANUFACTURING 1 (CAM 1)

4 credits

In a laboratory setting, CAM 1 explores machining by utilizing a graphical software package, SmartCAM, to generate part programs for a CNC mill. Following a review of manual part programming, the emphasis of the course is on learning to use the CAM software to select tools, enter part geometry, and convert screen graphics into a CNC program. The student then learns how to communicate the program to the machine and manufacture the part. Intensive work is included in editing the graphics to fully utilize the software. In addition, the student will learn the integration of Computer-Aided Design (CAD) with CAM to enhance his or her understanding of proceeding from the design process through the manufacturing process. **PREREQUISITE:** FA 112.

FA 435 — COMPUTER-AIDED MANUFACTURING 2 (CAM 2)

4 credits

CAM 2 continues the technology learned in CAM 1 by utilizing a graphical software package, SmartCAM, to generate part programs for a CNC mill and CNC lathe. In the first half of the course the students proceed in creating more complex milling parts requiring 3D machining. The remainder of the course is dedicated to turning operations. The course begins with a discussion of 3D work planes including construction of user-definable work planes. Students will learn how to draw defining geometry on layers, followed by the 3D commands needed to create swept and sculpted surfaces. Four- and five-axis machining is also included. Advanced features such as surface trimming and blending are also covered. Turning operations such as ID and OD turning, threading, grooving, and back turning are included in the second half of the course. Integration of CAD with CAM is also covered. **PREREQUISITE:** FA 335.

FB 110 — PRODUCTION PROCESSES

3 credits

This course is designed to provide the student with knowledge of the various manufacturing processes, such as castings, forgings, power metallurgy, and primary working operations. Included are topics in materials, quality control, welding, metal removal operations, and an introduction to automated manufacturing systems.

Offered Spring Semester

FB 135 — MECHANICAL DRAWING

3 credits

This course covers basic drawing skills. The fundamentals of orthogonal projection, sectioning, and auxiliary views will be covered. Descriptive geometric principles and the 3D concepts of axonometric, obliques, and central projection will be explored.

Offered Fall Semester

FB 221 — MECHANICS

3 credits

This is an applications-based course covering both coplanar and noncoplanar force systems (parallel, concurrent, and nonconcurrent), composition and resolution of force systems, analysis of truss and frame structures, two- and three-force members, static friction, centroids, and moments of inertia. PREREQUISITE: MM 132 or equivalent.

Offered Spring Semester

FB 224 — GEOMETRICAL DIMENSIONING AND TOLERANCING

3 credits

This course expands upon basic knowledge of dimensioning mechanical drawings by adding form and feature controls (functional dimensioning) in order to clearly define parts. The course begins with a review of dimensioning basics including fits and tolerances. The standards defined in ANSI Y14.5 are then studied, including form controls such as flatness and straightness, orientation controls such as perpendicularity and profile, and establishing and defining datums. The importance of control of location is emphasized including the concept of the bonus tolerance. PREREQUISITE: FB 135.

Offered Spring Semester

FB 225 — INTRODUCTION TO CIM

3 credits

An introduction to Computer Integrated Manufacturing (CIM) as related to various manufacturing environments. The student will become acquainted with CAD, CAM, CIM, robotics, flexible manufacturing cells, and just-in-time manufacturing practices. An overview of how these systems are employed in industry will be discussed. The focus will be on continuous improvement methods brought about by the computer.

Offered Fall Semester

FB 230 — CAD LEVEL 1

3 credits

The purpose of this course is to introduce the student to the terminology, capabilities, and operation of computer-aided drafting hardware and software. The student will be given graphic laboratory problems to create work files and to develop libraries and elementary drawings utilizing lines, rectangles, circles, arcs, and ellipses. Using AutoCAD as a typical computer-aided drafting program, students will also learn scaling, rotations, translations, and projections. PREREQUISITE: FB 135.

Offered Spring Semester

FB 315 — COMPUTER OPERATING SYSTEMS

3 credits

This introductory course will emphasize the practical aspects of operating systems. Initially, the IBM PC DOS operating system will be discussed. Topics will include the basic internal and external commands, device names, redirection and piping, sub-directories and paths, device drivers, and batch files. Then the IBM AS/400 operating system will be studied. Topics will include the basic commands, directories, physical and logical device names, logical name tables, local and global symbols, command files, UIC-based protection, and access-control lists.

Offered Fall Semester

MECHANICAL ENGINEERING TECHNOLOGY

FB 321 — STRENGTH OF MATERIALS

3 credits

This introductory course focuses on the static behavior of deformable solids. It covers simple stress/strain relationships; uniaxial, biaxial, and triaxial stress/strain relationships; thermal deformations and stresses; thin-walled pressure vessels; torsional deformations and stresses; stress concentrations; statically indeterminate structures; riveted and welded connections; shear and bending moment diagrams; shear and flexural stresses; and column design. **PREREQUISITE:** FB 221.

Offered Fall Semester

FB 331 — STATISTICAL PROCESS CONTROL

3 credits

A one-semester course designed to familiarize the student with quality control concepts, emphasizing the various types of control charts. How process control techniques relate to controlling manufacturing operations and assuring quality of the highest standards will be studied.

FB 336 — CAD LEVEL 2

4 credits

This course is a continuation of CAD Level 1. The student's knowledge of CAD is deepened by creating drawings of increased complexity. The objectives of CAD Level 1 will be reviewed, followed by the study of topics such as dimensioning using dimension variables, and prototype drawings using paper space vs. model space concepts. Block creation with attributes and library design are also covered. Most work will involve creating assembly and detail drawings, including tolerance of mating parts and the application of geometric tolerancing. Design and analysis using the computer are also studied, with emphasis on computer accuracy. Methods for producing professional quality drawings are studied. **PREREQUISITE:** FB 230.

Offered Fall Semester

FB 415 — ADVANCED CIM APPLICATIONS

3 credits

This course expands upon the general knowledge gained in FB 225 by providing the student with specific applications of CIM utilizing a hands-on laboratory setting. Students will analyze assigned projects and formulate a CIM system to solve the problem. Emphasis is on management and cost efficiency, including report generation.

Additionally, students will integrate CAD and CAM to design, build, program and operate a manufacturing cell to simulate a manufacturing environment.

Offered Spring Semester

FB 418 — AUTOMATED SYSTEMS LAB

3 credits

An intensive, lab oriented course designed to familiarize students with automated robotics used in the CIM environment. Students will learn to integrate robotics with computer numerical control machines. Students will develop flexible manufacturing cells. The emphasis will be placed on CNC processing stations, loop conveyor system, material handling, and vision cameras used for part inspection. **PREREQUISITES:** FB 110, FA 335.

Offered Spring Semester

FB 420 — FLUID MECHANICS

3 credits

This course includes a comprehensive study of hydrostatics, principles governing fluids at rest, pressure measurement, hydrostatic forces on submerged areas and objects, fluid flow in pipes under pressure, fluid energy, power, friction losses, Bernoulli's Theorem, and flow measurement. Application of these principles to the operation or control of fluid power equipment is also covered. **PREREQUISITE:** FB 221.

Offered Fall Semester

FB 430 — ENGINEERING ECONOMY

3 credits

This course is designed to acquaint the student with the various alternatives in engineering problems, and methods of evaluating them. The course covers the effects of capital, breakeven analysis, costs associated with equipment, depreciation and tax benefits, and the various types of costs associated with business. Computerized cost estimating is also covered, using the IBM-based Costimator by Manufacturers Technologies.

Offered Fall Semester

FB 435 — CAD LEVEL 3

3 credits

CAD Level Three studies the three-dimensional modeling techniques of the AutoCAD system. The course begins with a survey of the User Coordinate System command including how to define and save a UCS. Students learn how to view a wire frame object in 3D space and understand the illusions that are possible. The course then progresses into utilizing solid modeling with AutoCAD's Advanced Modeling Extension (AME). Solid model creation, editing and analysis are studied. Utilization of solid models to provide orthographic views, sections, and auxiliary views is emphasized. **PREREQUISITE:** FB 336.

Offered Spring Semester

FB 442 — MANUFACTURING PLANNING AND CONTROL

3 credits

General consideration is given to various phases and elements of production control which are later applied to continuous process companies and typical job shops. Several problem cases serve as a basis for classroom discussion. In addition to a general introduction involving various types of manufacturing plants and their respective products, the course includes a study of the elements that contribute to a successful production control program. Production forecasting, product development, control of materials, routing, scheduling, dispatching and follow-up are studied in sequence in terms of their significance and their relationship to production control. The course is based upon the idea that there is no standard production control procedure applicable to all manufacturing companies, but that there is a correct production control procedure which can be developed for any company, large or small.

Offered Spring Semester

FB 443 — CIM APPLICATIONS

3 credits

This course is designed to acquaint the student with the personal computer as a tool for analyzing various types of problems related to manufacturing. Students will become familiar with using the spreadsheet and its database, along with graphs as deemed necessary, and other related functions in reference to solving various manufacturing problems. Other types of software packages will be discussed that are presently available on the market.

Offered Fall Semester

FB 465 — ADVANCED CAD APPLICATIONS

2 credits

This course advances beyond the standard AutoCAD environment by exploring the concepts of customizing. Customizing includes creating menu macros and learning AutoLISP, AutoCAD's internal programming language. Menu macros and AutoLISP programming allow the user to create custom commands in order to automate frequently used, labor intensive routines.

GD 260 — GRAPHICS DESIGN LAB

2 credits

The student will have the opportunity to put together all knowledge obtained on various projects assigned by the instructor. He will do the design and rectify by calculations and computations in relationship to this along with the economical aspects.

Offered Spring Semester

Medical Assistant

AA 101 — MEDICAL TERMINOLOGY 1

3 credits

This course is designed to furnish the basic tools for building a medical vocabulary and to acquaint the reader with medical terms as they pertain to anatomy, physiology and disease. Emphasis will be placed on the most commonly used combinations of forms, prefixes and suffixes that make up the language of medicine. A working knowledge of medical terminology is desirable for anyone entering one of the health or human service fields. **PREREQUISITE:** LD 092.

Offered Fall and Spring Semesters

AA 105 — INTRODUCTION TO MEDICAL ASSISTING

1 credit

This module begins with an orientation to the profession of medical assisting. With the explosion of technology in the administrative procedures, and the regularity of surgical procedures now being done in the ambulatory setting, the role of the medical assistant has changed dramatically. The role of the patient educator as well as clinical assistant and administrative assistant will be explored.

Offered Fall Semester

AA 111 — HUMAN SEXUALITY: YESTERDAY, TODAY AND TOMORROW

1 credit

This module offers the opportunity for the student to acknowledge his/her feelings and thoughts; examine attitudes, beliefs, cultural patterns; and clarify his/her own value system as it relates to Human Sexuality, in an arena of nonjudgmental caring and concern. Impact of heredity/environment on one's sense of self-esteem will be examined.

Offered Fall and Spring Semesters

AA 112 — LIVING AND DYING: VALUES AND CHOICES

1 credit

The quality of life with emphasis on the student's values and choices will be explored and shared along with the impact of *Life's Losses* including divorce, separations, death and bereavement. This seminar module will examine the power and strength of the family unit and network support during the times of crisis.

Offered Fall and Spring Semesters

AA 113 — SKILLS FOR HEALTH

1 credit

A one-credit, five-week module geared to the exploration of total wellness; mind, body and spirit. The sense of responsibility and the learned skills could apply to the General Studies student as well as to those in Health/Human Services, business, technology programs, etc. Participants will explore the art/science of wellness through lecture and discussion of the holistic health component; reviewing communication skills, stress reduction, values clarification, and ethical conduct as they might apply in the health care field, market place, community at large, and/or in the family unit.

Offered Fall and Spring Semesters

AA 114 — CARDIO-PULMONARY RESUSCITATION

0 credit

This Red Cross modular course is designed to recertify for emergency first aid for respiratory failure and cardiac arrest victims of all ages. **PREREQUISITES:** AA 305, AA 210, or AA 211, and permission of department chairperson.

AA 116 — PRINCIPLES AND PRACTICE OF PHLEBOTOMY

1 credit

This module is designed to train and educate students in the procedure of phlebotomy/venipuncture. Incorporated into the class will be a lecture and laboratory practice sessions. **PREREQUISITES:** MB 132 and MB 232, and permission of the Department Chairperson.

MEDICAL ASSISTANT

AA 201 — MEDICAL TERMINOLOGY 2

3 credits

A continuation of AA 101 Medical Terminology 1. Emphasis will be placed on specific areas of medicine such as pathology, radiology, nuclear medicine, surgery, etc. Discussion of the tests, procedures, and diseases that are commonly related to each area will be an integral part. **PREREQUISITE:** AA 101.

AA 202 — MEDICAL ASSISTANT TECHNIQUES 1

5 credits

Presents theory and planned study activity in assisting with physical exams, taking vital signs and health history, medical asepsis, sterile technique, and selected diagnostic and therapeutic procedures. The student will be introduced to the computer concepts for medical office procedures and will learn how to enter key points of patient care such as allergies, results of diagnostic procedures, and other consulting physicians. **PREREQUISITE:** AA 105.

Offered Fall Semester

AA 206 — VENIPUNCTURE

1 credit

This course is designed to prepare the allied health student in the venipuncture/phlebotomy procedure for collection of diagnostic blood specimens, and/or instilling contrast medium, diagnostic radiopharmaceuticals, and/or other drugs necessary for diagnostic procedures. Incorporated into the course will be lectures supplemented with on-campus laboratory sessions.

Offered Fall and Spring Semesters

AA 207 — VENIPUNCTURE WITH AFFILIATION

1 credit

This course is formulated to assist and prepare the participant with the understanding and specific skills necessary in the performance of venipuncture/phlebotomy procedure to withdraw a specimen of blood for diagnostic testing, as well as instilling a medication, contrast medium or diagnostic radiopharmaceutical. Lectures and on-campus laboratory sessions will be supplemented with hospital laboratory experience aiming at high quality collection of diagnostic blood specimens.

Offered Fall and Spring Semesters

AA 209 — INTERDISCIPLINARY HEALTH TEAM ROLES AND RESPONSIBILITIES

3 credits

A study of the roles and responsibilities of the members of the health team in the 21st century to assist the student to understand inter-relations and interdisciplinary contributions to health care.

AA 210 — HEALTH SCIENCE 2

3 credits

Presents combined classroom theory and planned student activity in a laboratory setting to prepare the allied health student to perform the following: vital signs, medical and surgical asepsis, CPR, body mechanics and patient movement, and a general understanding of medications.

Offered Fall Semester

AA 211 — HEALTH SCIENCE 3

1 credit

Presents theory and practice in classroom and laboratory setting to prepare Allied Health students for basic clinical skills and life support measures. **PREREQUISITE:** Permission of Department Chairperson.

AA 215 — ELECTROCARDIOGRAPHY

1 credit

A one-credit course focusing on the technique of taking a basic electrocardiogram. Skills will be developed in laboratory sessions.

AA 301 — INTRODUCTION TO HUMAN DISEASE

3 credits

This course is designed to acquaint students with the major causes of death in the United States: heart disease, cancer, stroke, and others. The student will become aware of genetic and environmental effects on health. In addition, he/she will learn how to promote his/her own good health, and learn ways of taking charge to help prevent these major diseases from affecting self or family. Emphasis is on the relationship between daily life styles and health as a point of action for health-conscious people.

Offered Fall and Spring Semesters

AA 305 — MEDICAL ASSISTANT TECHNIQUES 2

5 credits

This course is a continuation of advanced theory and skills in medical assistant techniques. Selected laboratory procedures will include cardio-pulmonary resuscitation, minor surgery, injections, and the modalities used in rehabilitative procedures. The student will become more proficient in entering key points of patient care on the computer such as surgical procedures, using the correct codes to describe the service, and any other services from other providers involved in the patient's care. PREREQUISITE: AA 202.

Offered Fall Semester

AA 306 — LABORATORY PROCEDURES FOR MEDICAL ASSISTANTS

3 credits

This course combines lecture and laboratory experience designed to introduce medical assistants to the clinical science segment of medical assisting. Emphasis will be placed on using quality control, the collection and processing of specimens and performing selected tests that assist with the diagnosis and treatment in an ambulatory care setting. PREREQUISITE: AA 202.

Offered Fall and Spring Semesters

AA 319 — DOSAGE AND CALCULATIONS

1 credit

This course will introduce the student to the accurate calculation of drug dosage, an essential knowledge in the health care field, since it is the responsibility of those administering drugs to precisely and efficiently carry out medical orders. A review of fractions, decimals, percents, ratios, and roman numerals will be included, emphasizing examples used in the most common medication orders. Learning will be reinforced by computer-assisted problem solving and review questions that directly relate to concepts taught in AA 320.

Offered Fall and Spring Semesters

AA 320 — PHARMACOLOGY

3 credits

This Introductory course covers pharmaceutical references and sources, classifications and actions, trade and generic names of drugs. Presents current and commonly used practices, procedures, medications, and preparations. Effects of drugs and their side effects on body systems will be explored. Legal aspects of administering, prescribing, and dispensing of drugs will be included. PREREQUISITE: MM 077, AA 202, AA 305.

Offered Fall and Spring Semesters

AA 324 — PHARMACOLOGY FOR THE RESPONSIBLE PERSON

3 credits

This introductory course for the responsible person covers pharmaceutical references and sources; classifications; and acting, trade, and generic names of drugs. Presents current and commonly-used practices, procedures, medications, and preparations. Effects of drugs and their side effects on body systems will be explored. Legal aspects of administering, prescribing, and dispensing of drugs will be included. PREREQUISITE: MM 078, AA 100, AN 125.

MEDICAL ASSISTANT

AA 403 — MEDICAL ASSISTANT TECHNIQUES 3

8 credits

The affiliation period of 28 hours per week offers each student the opportunity to practice the skills learned in the College laboratory in supervised clinical experiences. Various sites in hospital clinics, outpatient laboratories, EKG departments, physician's offices, and health maintenance organizations will give the students the best possible background to make career decisions. **PREREQUISITES:** AA 202, AA 305, AA 306.

Offered Spring Semester

AA 450 — MEDICAL RECORDS

4 credits

An introduction to the medical record to assist the student to develop a thorough understanding of the content of the medical record in order to be able to locate information to support or provide specificity.

Offered Fall Semester

AA 451 — MEDICAL CODING 1

3 credits

An orientation to the code of ethics of the American Health Information Management Association and a systematic study of basic hospital inpatient (ICD-9-CM) and ambulatory care coding (ICD-9-CM and CPT/H CPCS). **PREREQUISITE or CONCURRENT:** AA 450, MB 148, AA 101.

Offered Fall Semester

AA 452 — MEDICAL CODING 2

5 credits

A study of DRG; RB-RVS; ASC payment methodologies in ICD-9-CM and CPT coding and the Peer Review Organization's impact on coding. Advanced coding procedures are treated as well as the current Health Care Finance Administration changes in regard to the payment methodologies. **PREREQUISITE:** AA 450, AA 451; **PREREQUISITE OR CONCURRENT:** AA 320 and AA 301.

Offered Spring Semester

Medical Office Administration (See Office Administration)

Microcomputer Specialist (See Computer Information Systems)

Music

LM 130 — MUSIC APPRECIATION

3 credits

A survey course for the general student in which significant works from the several periods of music history will be heard and discussed. This course will be open to all students at the College. Outside listening and reading assignments will be scheduled and attendance at live concerts will be encouraged.

Offered Fall and Spring Semesters

LM 133 — INTRODUCTION TO PIANO AND THEORY

3 credits

A beginning piano course for adult students without prior musical knowledge or skills. The course will combine both music theory and a laboratory skills program with major emphasis on the basic structure of keyboard music. Melody, chords, rhythm, form, dynamics and style will be studied by the student at the keyboard and discussed in lecture sessions. Students will be encouraged to proceed as their individual abilities permit, requiring considerable individualization of instruction as they gain technical mastery. Open to all students at the College. **PREREQUISITES:** None.

Offered Fall and Spring Semesters

NUCLEAR MEDICINE TECHNOLOGY

LM 234 — INTERMEDIATE PIANO AND THEORY

3 credits

A continuation of the introduction to keyboard skills course. Mastery of major and minor scales, arpeggios, and chords in all keys will be taught. The emphasis will be on developing mastery of sight-reading skill, providing the student with skills for further self-exploration of the keyboard upon completion of the program. Course open with the permission of the instructor or satisfactory completion of LM 133.

Offered Fall and Spring Semesters

Natural Science (See Math & Natural Sciences) Nuclear Medicine Technology

AZ 102 — INTRODUCTION TO NMT

3 credits

This course serves to introduce the student to Nuclear Medicine Technology. The first weeks are devoted to understanding the rationale and requirements of the program as documented in the Handbook. Covered are: competencies in radiation safety, radiation accident prevention, emergency protocols, clinical protocols, darkroom procedures, survey and wipe techniques. The remainder of the course covers in detail the regulatory aspect of radioactive materials, an overview of the NMT program with the essentials, imaging procedures as an observer, the NMT laboratory, packaging, record keeping, and radioactive disposal. Basic chemistry is also covered. RESTRICTED TO AZ. PREREQUISITES: concurrent MB 132, AX 114.

Offered Fall Semester

AZ 104 — ORIENTATION TO PRACTICUM

0 credit

This orientation class will provide the student with an understanding of the Nuclear Medicine procedures, terminology associated with the department, and a general overview of the field, thus allowing a smooth transition for the student into the hospital setting. RESTRICTED TO AZ.

Offered Fall Semester

AZ 210 — NUCLEAR IMAGING OF ORGANS

3 credits

This course initially introduces the methods of localization and biorouting of radiopharmaceuticals used in Nuclear Medicine Technology. Upon completion of the above, the course will move into an organ/system approach dealing with but not limited to the following organ systems: central nervous, endocrine, respiratory, gastrointestinal, therapeutic systems and other miscellaneous systems. The coverage of each organ system will include in detail a discussion of the anatomy and physiology, radiopharmaceuticals used, technical aspects of imaging, as well as the indications and interpretations of the scans. RESTRICTED TO AZ. PREREQUISITES: AZ 102, MB 132, concurrent MB 232.

Offered Spring Semester

AZ 211 — NUCLEAR CARDIOLOGY

1 credit

Cardiac physiology and pathology are discussed in detail. Patient preparation, radiopharmaceuticals, instrumentation, and data acquisition are studied. Computer analysis of data both qualitative and quantitative for specific cardiac function and measurement are presented. Phase analysis and dual nuclide imaging, and applications are covered. RESTRICTED TO AZ. CONCURRENT: AZ 210, MB 232 and AZ 207.

Offered Spring Semester

NUCLEAR MEDICINE TECHNOLOGY

AZ 306 — STATISTICS AND INSTRUMENTATION

3 credits

The mathematics and rationale underlying the Poisson and Gaussian statistics is explained from basic terminology to linear regression. Basic electronics is covered enough to explain performance characteristics of collimators and phantoms. Quality assurance parameters of the dose calibrator, survey meters, scintillation tubes, and output instrumentation is covered; generator systems are also covered. RESTRICTED TO AZ. PREREQUISITES: AZ 210, MB 132, MM 093, concurrent MP 300.

Offered Fall Semester

AZ 414 — IN VITRO AND NON-IMAGING STUDIES

3 credits

Various gastrointestinal studies are covered including the Schillings test. Hematologic and dilution procedures of the red cells and ferrokinetics are presented. Radioassay discusses the theory of immunology and radioassay and enzyme studies. Liquid scintillation instrumentation is covered. RESTRICTED TO AZ. PREREQUISITES: AZ 210, AZ 211, and AZ 306.

Offered Spring Semester

AZ 415 — INDEPENDENT STUDY

0 credit

This is a course of directed review and study for the student who has completed all the course requirements in Nuclear Medicine Technology but who has failed to pass the simulated registry examination as required for graduation. Successful completion of this course with a passing grade on a comprehensive examination will enable such a student to graduate. RESTRICTED TO AZ.

Offered Fall Semester

PRACTICUM EXPERIENCE

Practicum includes the clinical experiences unifying the theory taught in the Nuclear Medicine Technology and support courses. The sequencing of the practicum and competency examinations in specific task areas places gradual expectations on the level of the student so that after over 1900 accumulated clinical hours in twenty-four months, the student can be graduated as a competent NMT, board eligible. The expectations and requirements are outlined in the student handbook as well as in each course syllabus.

AZ 103 — PRACTICUM 1

2 credits

The student is expected to apply classroom knowledge within the clinical setting, demonstrating initiative and enthusiasm to the supervising technologist. The semester competency examinations indicate the ability of the student to integrate theory and clinical practice. Offered two eight-hour days per week for a total of 144 clinical hours. RESTRICTED TO AZ. PREREQUISITES: AZ 104, AX 114, concurrent MB 132, AZ 102.

Offered Fall Semester

AZ 207 — PRACTICUM 2

2 credits

This is the second course in the sequence of clinical practicum. Additional competency examinations are required. Offered two eight-hour days per week for a total of 216 clinical hours. RESTRICTED TO AZ. PREREQUISITES: AZ 102, AZ 103, MB 132, concurrent AZ 210, AZ 211 and MB 232.

Offered Spring Semester

AZ 209 — PRACTICUM-SUMMER-1

5 credits

This is the third in the sequence of clinical practicum. Weekly classes are scheduled for the purpose of clinical discussion and review. A comprehensive examination is required in August, covering the topics included in the first year of study. Grading for

the summer session will reflect both the clinical and the comprehensive components of the course. Offered 40 hours per week for a total of 440 clinical hours. Restricted to AZ. PREREQUISITES: AZ 207, AZ 210, and MB 232.

Offered Summer Semester

AZ 301 — PRACTICUM 3

5 credits

This is the fourth course in the sequence of clinical experience. Additional competency examinations will be assigned. Offered three eight-hour days per week for a total of 328 clinical hours. RESTRICTED TO AZ. PREREQUISITES: AZ 209, concurrent AZ 306, MP 300.

Offered Fall Semester

AZ 401 — PRACTICUM 4

5 credits

This is the fifth course in the sequence of clinical experience. Additional competency examinations will be assigned. Offered three eight-hour days per week for a total of 328 clinical hours. Basic skills in pipetting technique and in the use of the Spectrophotometer will be taught by the Clinical Laboratory Science faculty. Theory and practice of in-vitro immunoassay procedures will be discussed to include both radioimmunoassay and enzyme immunoassay procedures. RESTRICTED TO AZ. PREREQUISITES: AZ 301, AZ 204, MP 300.

Offered Spring Semester

AZ 410 — PRACTICUM-SUMMER-2

5 credits

This is the final practicum course, which involves the integration of two years of classroom learning with clinical practice. The student will be supervised one-on-one with the injection of radiopharmaceuticals as each affiliate permits. Weekly classes are scheduled for the purpose of clinical discussion and review. A comprehensive simulated registry exam is required. Grading for the summer session will reflect both the clinical and comprehensive components of the course. Those students falling below the minimum passing grade of 73 as a result of the comprehensive exam may elect to enroll for an additional semester in an independent study course (AZ 415). Offered 40 hours per week for a total of 360 clinical hours. RESTRICTED TO AZ. PREREQUISITES: AZ 401, AZ 414.

Offered Summer Semester

Nursing

AN 100 — PRIMARY PREVENTIVE INTERVENTIONS 1A

7 credits

This course is an introduction to contemporary nursing. The conceptual framework utilized is Neuman's Health Care Systems Model. Using principles drawn from Neuman's Model and from the behavioral and biological sciences, the student is guided in developing the ability to use a systematic method for multidimensional assessment of the client. The dimensional variables include physiological, psychological, sociocultural, developmental, and spiritual aspects. Concepts identified are those intended to assist the student to gain knowledge and understanding of the life cycle, nursing process, nursing issues, health needs, basic nutrition/elimination, and pharmacology. Integrated with the theoretical content is planned simulated laboratory practice and planned experiences in health facilities which provide the opportunity to apply the conceptual model and develop basic nursing skill. In order to develop the student's ability to compute medication dosage, completion of Math Module (MM 077) is required by the twelfth (12th) week.

Offered Fall Semester

NURSING

AN 125 — BASIC CONCEPTS: MENTAL HEALTH/MENTAL RETARDATION

3 credits

A basic nursing assistant course preparing students to assist personnel in mental health or mental retardation settings.

AN 126 — SKILLS FOR THE HEALTH CARE PROVIDER

8 credits

A basic nursing skills course to prepare the student to qualify as a certified nursing assistant and/or home health aide.

AN 201 — SECONDARY/TERTIARY PREVENTIVE INTERVENTIONS 1A

8 credits

This course builds on the knowledge of the basic concepts of nursing, health, person and environment derived from AN 100. The student moves from primary to secondary and tertiary interventions in caring for the adult and child client/client system. The student focuses on promoting the client's dynamic state of adjustment toward stability and wellness.

Integrated with the theoretical content is planned simulated laboratory practice and planned experiences in acute health care facilities which provide the opportunity to apply the conceptual model and further develop nursing skills.

Offered Spring Semester

AN 300 — SECONDARY/TERTIARY PREVENTIVE INTERVENTIONS 2A

9 credits

This course is a continuation of AN 201. The student is more independent in using the nursing process to coordinate care for clients/client systems with more complex health problems.

Offered Fall Semester

AN 400 — SECONDARY/TERTIARY PREVENTIVE INTERVENTIONS 3A

9 credits

This course focuses on concerns of individuals and/or families experiencing stressors dealing with childbearing and/or mental health. The developmental approach is used to assist the student to assimilate knowledge and understanding of the behavior which brings a person to crisis in mental health. This course is also concerned with the maintenance of health while coping with the stressors of pregnancy, childbirth, and the integration of the newborn into the family.

The student nurse becomes skilled in using the nursing process, communication techniques, and the Neuman Health Care Systems Model to meet needs of the client/client system in a variety of settings both in acute care and the community. There are two equal clinical rotations: nursing the childbearing family, and mental health nursing. Common content areas are integrated at meaningful periods within the course.

Offered Spring Semester

AN 410 — INTRODUCTION TO NURSING MANAGEMENT AND LAW

2 credits

Nursing process is utilized in assisting students to identify their needs and problems in the transition role from student to graduate. This course is designed to help prepare the graduate for professional nursing responsibilities. Discussion topics include basic legal concepts, current issues in nursing, nursing management within an organization, and the role of the nurse within the nursing profession.

Offered Spring Semester

Occupational Therapy Assistant

AF 100 — OCCUPATIONAL THERAPY ASSISTANT 1

5 credits

This course leads to an understanding of the profession of occupational therapy and its role in the multidisciplinary team. The roles of the OTR and COTA are identified and explored within different health care delivery systems. Several frames of reference for the practice of occupational therapy will be reviewed. The profession's philosophy and ethics will be defined. **CONCURRENT:** NP 100, MB 132.

Offered Fall Semester

AF 200 — OCCUPATIONAL THERAPY ASSISTANT 2

5 credits

Emphasis in this course is on the development and restoration of occupational performance. The student will acquire the knowledge and practical skills necessary to participate in the screening, evaluation, and treatment process for patients with physical dysfunction. The student will be educated in the principles of remedial, habilitative and rehabilitative practice and have the opportunity to observe these practice skills in area facilities. **PREREQUISITE:** AF 100; **CONCURRENT:** MB 232, NP 325, and AF 201.

Offered Spring Semester

AF 201 — PHYSICAL PATHOLOGY

3 credits

Emphasis in this course is on the development and physical disabilities caused by neurological, orthopedic impairment or insult, cardiovascular problems and the degenerative process. The principles of medical practice and if applicable educational intervention used with these specific health problems will be identified. **PREREQUISITE:** AF 100; **CONCURRENT:** AF 200, MB 232, NP 325.

Offered Spring Semester

AF 300 — OCCUPATIONAL THERAPY ASSISTANT 3

5 credits

Emphasis in this course is on the psychosocial aspects of occupational performance and the role of the COTA in the therapeutic process. The student will acquire the knowledge and practical skills necessary to participate in the screening, evaluation, and treatment planning of patients with psychosocial dysfunction. The student will be evaluated in the principles of mental health practice and will have the opportunity to observe these practice skills in area facilities. **PREREQUISITES:** AF 200, AF 201, NP 325; **CONCURRENT:** AF 301, AF 302, AF 303.

Offered Fall Semester

AF 301 — PSYCHOSOCIAL PATHOLOGY

3 credits

Upon completion of this course, the student will be knowledgeable of the psychiatric disorders commonly referred to occupational therapy. The sociocultural, environmental, and biological influences contributing to mental illness will be examined. **PREREQUISITES:** AF 200, AF 201, NP 325; **CONCURRENT:** AF 300, AF 302, AF 303.

Offered Fall Semester

AF 302 — OCCUPATIONAL THERAPY MEDIA

2 credits

This course emphasizes the therapeutic use of purposeful activities to enhance role performance of patients. Activity adaptation and the use of assistive devices and technology will be explored. **PREREQUISITES:** AF 100, AF 200, AF 201, NP 325; **CONCURRENT:** AF 300, AF 301, AF 303.

Offered Fall Semester

OCCUPATIONAL THERAPY ASSISTANT

AF 303 — PRINCIPLES OF OCCUPATIONAL THERAPY MANAGEMENT 3 credits

This course emphasizes the administrative and supervisory role of the occupational therapy assistant within health care delivery systems. The importance of documentation, accountability in service provision, and involvement in research will be examined. **PREREQUISITES:** AF 100, AF 200, AF 201, NP 325; **CONCURRENT:** AF 300, AF 301, AF 302.

Offered Fall Semester

AF 400 — OCCUPATIONAL THERAPY ASSISTANT SEMINAR 2 credits

This course is designed to foster critical thinking, application of theory, and professional roles and behaviors. Sharing of practical experiences will be emphasized. **PREREQUISITES:** AF 300, AF 301, AF 302, AF 303; **CONCURRENT:** AF 401 or AF 402.

Offered Spring Semester

AF 401 — OCCUPATIONAL THERAPY ASSISTANT PRACTICUM 1* 4 credits

Two hundred forty hours of fieldwork experience are conducted under the supervision of a registered occupational therapist in the area of either psychosocial or physical dysfunction to promote application of academic and technical skills. **PREREQUISITES:** AF 300, AF 301, AF 302, AF 303; **CONCURRENT:** AF 400.

Offered Spring Semester

AF 402 — OCCUPATIONAL THERAPY ASSISTANT PRACTICUM 2* 4 credits

Two hundred forty hours of continued fieldwork experience are conducted under the supervision of a registered occupational therapist in the area of either psychosocial or physical dysfunction to promote application of academic and technical skills. **PREREQUISITES:** AF 300, AF 301, AF 302, AF 303; **CONCURRENT:** AF 400.

Offered Spring Semester

*It should be noted that the practicum hours of AF 401 and AF 402 are interchangeable or concurrent.

Office Administration

BK 312 — WOMEN, MANAGEMENT, AND LEADERSHIP 3 credits

This course is designed to prepare women to be effective participants and leaders in organizational settings. Students will examine the "Holistic Leadership Model for Women" to develop an appreciation of the interactional effects between societal, organizational, and self norms and expectations of our leadership in organizations. Objectives of the course are: 1) to develop an appreciation of the role of cultural differences in our ability to be effective leaders; 2) to increase our understanding of our own leadership styles through the assessment of our attitudes, values, and behaviors on leadership dimensions of particular concern to women in organizations; 3) to develop confidence in our styles of leadership as women and to develop strategies for the effective application of our styles to organizational settings; and 4) to increase our knowledge of leadership theory as well as critique the theory in terms of its relevance to women's experience in organizations. **PREREQUISITES:** BK 110 or BK 112.

Offered Periodically

BL 305 — LEGAL SHORTHAND TERMINOLOGY 3 credits

This course is designed to give the student a background in basic legal terminology, including Latin and French terms. The student who successfully completes this course will be able to correctly spell, pronounce, and define the legal terms presented, in addition to developing the ability to take and transcribe this legal terminology using Gregg shorthand or machine shorthand. Students who plan to work in a legal office as

a receptionist/typist, secretary, stenographer, word processor, or research assistant, or in a court-related job such as court reporter, note-reader transcriber, or scopist/transcriptionist will benefit from the course. Reporting students will develop a legal CAT dictionary. This course meets three hours per week. A grade of "C" or better is required. PREREQUISITES: BZ 202 or BC 304.

Offered Fall Semester

BM 304 — MEDICAL TYPEWRITING

4 credits

This course is designed specifically for the Medical Office Administration major. This production typing course concentrates on understanding and accuracy in typing medical forms, reports, progress notes, case histories, and correspondence. Typing stamina is built and maintained through 5-minute timed writings using medical material. The minimum speed requirement for this course is 50 words per minute for 5 minutes with 5 or fewer errors from unpracticed medical material. The course meets 5 hours per week. A grade of "C" or better is required for course completion. PREREQUISITE: BZ 201 or equivalent, and a minimum speed of 40 wpm for 5 minutes. NOTE: No credit is given unless minimum mailability standards are achieved.

Offered Fall Semester

BM 303 — MEDICAL OFFICE PRACTICE

2 credits

This course is designed to familiarize the Medical Administration and Medical Assistant student with the routine business skills pertinent to the medical office. This course includes the development of reception room procedures, telephone techniques, and various other medical office assistant duties. The course meets 2 hours per week. PREREQUISITE: BZ 104. (BZ 113 should be scheduled separately).

Offered Spring Semester

BM 305 — MEDICAL KEYBOARDING

3 credits

This course is designed specifically for the Medical Office Administration major. Students will learn to keyboard medical forms, reports, progress notes, case histories, and correspondence. Keyboarding stamina is built and maintained through 5-minute timed writings using medical material. The minimum speed requirement for this course is 50 WPM for 5 minutes with 5 or fewer errors from unpracticed medical material. A grade of "C" or better is required for course completion. PREREQUISITE: BZ 204/BZ 408.

Offered Spring Semester

BM 307 — MEDICAL OFFICE PRACTICES AND PROCEDURES

3 credits

This course is designed to familiarize the Medical Office Administration student with the routine business skills pertinent to the medical office. This course includes developing reception room procedures, scheduling appointments, handling patient forms, understanding medical terminology and medical abbreviations, coding for insurance forms, handling fees and collections, taking vital signs and CPR, and various other medical office assistant duties. PREREQUISITE: BZ 104.

Offered Fall Semester

BM 454 — MEDICAL MACHINE TRANSCRIPTION

3 credits

This course is designed to introduce the Medical Office Administration student to machine transcription. Students will learn how to operate machine transcription equipment while keyboarding various medical documents such as case histories, chart/progress notes, physical examinations, and medical correspondence. PREREQUISITE: BZ 204 ("C" or better).

Offered Spring Semester

OFFICE ADMINISTRATION

BO 103 — OFFICE ASSISTANT PROCEDURES

2 credits

The job of the Office Assistant includes many tasks such as typing, filing, recordkeeping, operating office machines, performing receptionist duties, and doing general office work. The job title assigned to this type of work may be office assistant, general office clerk, office clerk, secretarial assistant, clerical assistant, typist, clerk-typist, records clerk, or office machine operator. This course prepares students for the varied and interesting work found in the modern office. It provides students with the opportunity to acquire the knowledge and skills needed to perform these important duties in a field of work that continues to grow.

Offered Fall Semester

BO 204 — INTRO. TO MACHINE TRANSCRIPTION

3 credits

This course is an introduction to basic transcription techniques with emphasis on spelling, grammar, punctuation, number usage, and capitalization. Vocational competence in machine transcription for the clerical office worker is the principal goal. Developing good listening techniques, producing first-time mailable business communications, and learning the importance of machine dictation and transcription in the word processing cycle are the important objectives in this course. **PREREQUISITES:** BZ 104, BZ 105.

Offered Spring Semester

BP 106 — MEDICAL ASSISTANT RECORDKEEPING

1 credit

This course is designed to introduce the medical assistant to the basics of medical office recordkeeping. A brief survey of the methods and procedures of billing, banking and bookkeeping will be presented.

Offered Spring Semester

BZ 100 — BASIC KEYBOARDING SKILLS

1 credit

This course is designed for any individual wishing to develop touch keyboarding skills applicable to today's sophisticated electronic typewriter and computer keyboards. A minimum touch keyboarding speed of 20 wpm is required for course completion. Available to the entire STCC community. **PREREQUISITES:** None.

Offered Fall and Spring Semesters

BZ 102 — SHORTHAND FOR THE ELECTRONIC OFFICE 1

4 credits

This course introduces Gregg Shorthand for the information processing era. Emphasis is placed on mastery of basic principles with particular attention to penmanship, and theory development. The course stresses the use of shorthand as a recognized business and industry indicator for predicting profitability and productivity in the electronic office. The minimum speed requirement for the course is 40 words per minute for 2 minutes on familiar material with a minimum of 95% accuracy. The course meets 5 hours per week. A grade of "C" or better is required.

Offered Fall Semester

BZ 103 — INTRODUCTION TO WORD PROCESSING

1 credit

This modularized course is designed to acquaint beginners with basic word processing capabilities using Wang and/or IBM systems and varying software. Three five-week sessions will be offered: Session One, Wang Integrated Information Processing; Session Two, IBM PC, WordPerfect; Session Three, IBM PC, Multimate. Students wishing to enroll in more than one module may do so under a directed study contract with the instructor. Some typing experience is helpful.

Offered Fall and Spring Semesters

BZ 104 — KEYBOARDING 1

4 credits

A foundation course in which current typewriting techniques, speed and accuracy are stressed. Three-minute timed writings are introduced. The student becomes familiar with centering, manuscripts, tabulations and letter style. Class drills and projects aid in

individual progress. The minimum speed requirement for the course is 30 words per minute for 3 minutes with 3 or less errors for beginners. Course meets 6 hours per week. A grade of "C" is required.

Offered Fall and Spring Semesters

BZ 105 — WORD PROCESSING EDITING

3 credits

Word Processing Editing is a one-semester course which prepares the student for production of mailable business communications in machine transcription and word processing courses. The course emphasizes the basic principles of typewriting style and word division, punctuation style, spelling improvement, capitalization, number and abbreviation styles, proofreading, and editing. Achievement tests will be administered upon completion of each area of emphasis.

Offered Fall and/or Spring Semesters

BZ 107 — TELEPHONE COMMUNICATIONS/RECORDS MANAGEMENT

3 credits

During the first half of the semester students will learn about the life cycles of records, beginning with their creation and ending with their disposition. The student will learn to manage five filing methods: alphabetic, consecutive numeric, terminal-digit numeric, subject, and geographic, as well as color coding of files. During the second half of the semester, students will learn how to communicate effectively on the telephone, handle incoming and outgoing calls, use effective techniques to ensure active listening, improve vocal expressions, handle stressful calls professionally, and project a positive and professional image.

Offered Fall Semester

BZ 113 — RECORDS MANAGEMENT

1 credit

In this course the student learns the office procedures involved in records management and in the alphabetic filing arrangement of personal names and the names of businesses, institutions, and government agencies. Subject, numeric, and geographic filing are also presented. New emphasis will be given to electronic filing.

Offered Fall and Spring Semesters

BZ 114 — AVT/MLS TYPEWRITING 1

4 credits

This course is designed for students who have previous knowledge and experience with the keyboard. The course is a self-paced typing program in the Office Administration Learning Center, wherein students work independently of other class members. Students use audio-visual multi-media learning systems, slides, and cassettes for instructors. Some group lecture will also be presented. An instructor and/or lab assistant is available at all times to assist students. Emphasis is placed on developing correct typewriting techniques, accuracy, and speed. The minimum speed requirement for the course is 30 words per minute for 3 minutes with 3 or less errors. The course meets 5 hours per week. A grade of "C" or better is required. **PREREQUISITE:** Touch key-boarding skill.

Offered Fall and/or Spring Semesters

BZ 115 — STENOSCRIPT 1

3 credits

Stenoscrypt is an alphabetic system of shorthand that can be learned in one semester. Students will develop a marketable shorthand skill of up to 80 words a minute that will make them more employable and help them earn better salaries. Brief alphabetic forms, abbreviations, business vocabulary, punctuation rules, speed building drills, and a 6,000-word business dictionary are presented. This course is designed for any students seeking stenoscrypt abilities; however, students wishing a degree in Office Administration **with shorthand** should enroll in **BZ 102—Shorthand 1**.

Offered Periodically

OFFICE ADMINISTRATION

BZ 200 — KEYBOARD SKILL BUILDING

1 credit

This course is designed to assist individuals in building keyboard speed. Individual speed building goals will be determined with a minimum goal of 10 wpm gain for five minutes with five or less errors. Available to the entire STCC community. Students wishing to enroll in more than one module may do so under a directed study contract with the instructor. **PREREQUISITE:** BZ 100, BZ 104, or BZ 114, or touch keyboarding skill.

Offered Fall and Spring Semesters

BZ 202 — SHORTHAND FOR THE ELECTRONIC OFFICE 2

4 credits

This course continues the refinement of the principles of Gregg Shorthand for the information processing era with further emphasis on basic principles, penmanship, vocabulary, spelling, punctuation, English grammar, and transcription. Since over two-thirds of today's business executives specify secretaries with shorthand, emphasis is placed on the development of speed and accuracy in taking dictation. The concept of computer shorthand will be introduced. The minimum requirement for the course is 60 words per minute for 3 minutes on new material with 95% accuracy. The course meets 5 hours per week. A grade of "C" or better is required. **PREREQUISITES:** BZ 102, BZ 104.

Offered Spring Semester

BZ 203 — COMPUTER SHORTHAND FOR NON-SHORTHAND WRITERS

3 credits

Gregg Computer Shorthand applies the basics of Gregg phonetic system in the creation of documents at the microcomputer. Better than "speedwriting," computer shorthand dramatically increases the transcriber's speed and accuracy with sophisticated software that automatically completes shortened words. **PREREQUISITE:** BZ 104 or a touch-typing capability of 35 wpm.

Offered Fall and Spring Semesters

BZ 204 — INTERMEDIATE KEYBOARDING

4 credits

The course is a continuation of BZ 104 or its equivalent with continued development of speed and accuracy together with a thorough mastery of all letter and envelope styles, interoffice correspondence, rough draft materials and tabulation. The minimum requirement for this course is 40 words per minute for 5 minutes with 5 or less errors. The course meets 5 hours per week. A grade of "C" or better is required. **PREREQUISITE:** BZ 104 or equivalent.

Offered Fall and/or Spring Semesters

BZ 205 — WORD PROCESSING CONCEPTS

1 credit

This lecture course introduces the total concept of word/information processing. It serves as an overview for college students who are interested in learning how to adapt technically advanced office equipment to process words. The course introduces the concept and role of word processing in office automation; explains the rapidly expanding technology and terminology and those career opportunities it offers; and uncovers the mysteries of modern office technology and its effect upon office work and those who perform it. This course meets once a week, and should be taken prior to or concurrently with BZ 306.

Offered Fall and Spring Semesters

BZ 206 — BASIC WORD PROCESSING APPLICATIONS

3 credits

This word processing course is designed to introduce beginners to basic word processing capabilities using the IBM personal computer. Students will complete assignments using basic commands and basic formatting applications such as creat-

OFFICE ADMINISTRATION

ing and saving documents; enhancing documents with bold, underline, italics, etc.; adjusting style and size of type; applying headers and footers; maintaining directories; and using spell check features. PREREQUISITE: Touch keyboarding rate of 20 wpm.
Offered Fall and Spring Semesters

BZ 214 — AVT/MLS TYPEWRITING 2

4 credits

This course is a continuation of BZ 114. The course is a self-paced typing program in the Office Administration Learning Center wherein students work independently of other class members. Emphasis is on continued development of speed and accuracy and a thorough mastery of production assignments. The minimum requirement for this course is 40 words per minute for 5 minutes, with 5 errors or less. This course meets 5 hours per week. A grade of "C" or better is required. PREREQUISITE: BZ 114 or BZ 104.

Offered Fall and/or Spring Semesters

BZ 240 — BUSINESS CALCULATING MACHINES

1 credit

This course gives the student instruction and practice on the ten-key keyboard calculator commonly found in business offices. The application of basic mathematical principles in solving business problems is stressed. This course meets for a total of 15 hours.

Offered Fall and/or Spring Semesters

BZ 245 — MICRONUMERICS

3 credits

This course emphasizes the use of the touch system for micronumeric data entry on the ten-key keypad. A minimum numeric data entry rate of 90 strokes a minute (SAM) is required for course completion. Students will utilize this kinesthetic sense while they solve business applications commonly found in the office, such as basic mathematical operations, fractions and decimals, percents, sales tax, payroll, trade discounts and simple interest.

Offered Fall and Spring Semesters

BZ 251 — MEDICAL TYPEWRITING

3 credits

This course is designed specifically for the Medical Assistant. Emphasis is placed on the understanding and production of medical forms, insurance forms, case histories, discharge summaries, medical reports, and medical correspondence. Typing stamina is built and maintained through 5-minute timed writings using medical material. PREREQUISITE: BZ 104 or equivalent.

BZ 260 — MEDICAL WORD PROCESSING

3 credits

This course is designed specifically to familiarize the medical assistant with word processing capabilities using the IBM PC. Major emphasis is placed on using basic word processing functions in producing documents such as case histories, discharge summaries, medical reports, and medical correspondence. This course meets for three lecture hours and a one-hour lab. PREREQUISITE: BZ 100 or BZ 103.

Offered Spring Semester

BZ 265 — ADMINISTRATIVE MEDICAL ASSISTANT PROCEDURES

3 credits

This course is designed to familiarize the medical assistant student with the specific business skills pertinent to the medical office. This course includes developing competencies involving proper telephone techniques, interviewing effectively, handling records management, scheduling and monitoring appointments, transcribing medical documents, managing a physician's professional schedule, and various other office responsibilities. PREREQUISITE: BZ 260.

Offered Fall Semester

OFFICE ADMINISTRATION

BZ 300 — KEYBOARD SPEEDBUILDING AND APPLICATIONS

2 credits

This course introduces students to keyboarding techniques, drills, and strategies which aid in developing superior keyboarding capabilities. By utilizing an individualized diagnostic/prescriptive method, this is a complete speedbuilding and accuracy-development keyboarding program which enables students to identify their speed and accuracy problems and to select appropriate corrective drills. Five-minute timed writings are presented. **PREREQUISITE:** 20 WPM touch keyboarding rate.

BZ 301 — ADVANCED KEYBOARDING APPLICATIONS

4 credits

This course combines advanced keyboarding production principles for Executive/Legal and Medical Office Administration majors. Difficult materials in manuscripts, statistical, letter, and rough draft typing present a challenge in problem solving, in addition to preparation of legal and medical documents. The minimum speed requirement for this course is 50 wpm for five minutes with five or less errors. This course meets six hours per week. A grade of "C" or better is necessary to meet graduation requirements. **PREREQUISITE:** BZ 204 or equivalent.

Offered Fall Semester

BZ 302 — SHORTHAND SPEED BUILDING

2 credits

This course stresses the development of speed with continued emphasis on basic Gregg principles and transcription for mailability in the electronic office. The minimum requirement for the course is 80 words per minute for 5 minutes with 95% accuracy. The course meets 3 hours per week. A grade of "C" or better is required. **PREREQUISITE:** BZ 202, BZ 204.

Offered Fall Semester

BZ 304 — MACHINE TRANSCRIPTION

3 credits

This course emphasizes the techniques and operation of machine transcription equipment. Transcription skills will be acquired through the use of a wide variety of business related dictation — executive, legal, and medical. Grammar, spelling, punctuation, capitalization, proofreading, and the use of reference material will be stressed. The relationship of machine transcription to the word-processing concept will also be introduced. The course meets three hours per week. **PREREQUISITE:** BZ 204, BZ 105, 40 WPM typing speed.

Offered Spring Semester

BZ 306 — WORD PROCESSING TECHNOLOGY 1 ON

WANG INTEGRATED INFORMATION SYSTEMS

4 credits

This course is designed to familiarize the student with Wang Integrated information processing equipment and applications. Students will complete basic and advanced word processing assignments using state-of-the-art equipment. The second half of the course will introduce students to glossary writing — the creation of glossary programs that will automatically perform specified integrated word processing functions — and to Wang Desktop Publishing. The knowledge and skills gained in this course are easily transferable to other computer systems. This course meets 5 hours per week. **PREREQUISITE:** BZ 204.

Offered Fall and/or Spring Semesters

BZ 307 — ADMINISTRATIVE OFFICE PRACTICE AND PROCEDURES

3 credits

This course provides in-depth discussion and application of procedures that students will be expected to perform upon entering the work world. The tasks and responsibilities of the administrative assistant are analyzed, as are professional image, characteristics, personality traits, job attitudes, and office relationships. Techniques for organizing time and work, keeping appointment records, setting priorities, manag-

ing stress, and maintaining public relations are presented. Students are also prepared for their job search by learning how to locate job prospects, prepare a resume, present themselves for an interview, and compose related letters.

Offered Fall Semester

BZ 401 — ADVANCED KEYBOARDING

3 credits

This course utilizes advanced desktop publishing principles for students enrolled in the Executive and Legal Office Administration programs. Difficult materials in manuscripts, statistical, letter, and rough draft present a challenge in problem-solving, in addition to the preparation of legal documents. The minimum speed required for this course is 50 WPM for five minutes with five or less errors. A grade of "C" or better is necessary to meet graduation requirements. PREREQUISITE: BZ 406, BZ 204.

Offered Spring Semester

BZ 402 — SHORTHAND FOR THE ELECTRONIC OFFICE 3

4 credits

This course is designed to develop the Executive and Legal Office Administration major's ability to take executive and legal dictation at high rates of speed, and to transcribe rapidly and accurately. Shorthand theory, legal terminology, punctuation, spelling, and vocabulary are stressed throughout the course. The course meets six hours per week. A grade of "C" or better is required. PREREQUISITES: BZ 202, BZ 301. NOTE: No credit is given unless minimum mailability standards are achieved.

Offered Spring Semester

BZ 406 — ADVANCED WORD PROCESSING

3 credits

This course is a continuation of BZ 206, Basic Word Processing. This course is designed to familiarize the student with advanced information processing capabilities on the IBM personal computer. Students will complete exercises consisting of advanced line formatting, formatting with macros, inserting graphic images, creating graphic elements, creating tables, merging documents, and using styles. PREREQUISITES: BZ 206 and BZ 204 ("C" or better): permission of instructor.

Offered Fall Semester

BZ 408 — ADVANCED WORD PROCESSING

3 credits

This course is a continuation of BZ 206, Basic Word Processing. This course parallels the material in BZ 406. PREREQUISITES: BZ 206 and BZ 204 ("C" or better): permission of instructor.

Offered Fall Semester

BZ 416 — ADVANCED WANG WP PLUS WORD PROCESSING APPLICATIONS

4 credits

This course places emphasis on advanced information processing applications on Wang Integrated Information Systems (VS and PC). Particular emphasis is placed on WP Plus, WP Plus Glossary, WP Plus Desktop Publishing, utility functions, and Wang PC operations. Work will be produced using state-of-the-art equipment, including text/image scanners and desktop laser printers. This course meets six hours per week. PREREQUISITE: "B" or better in BZ 306.

Offered Periodically

BZ 397 — OFFICE ADMINISTRATION COOPERATIVE EDUCATION

3 credits

This course is designed for students in the Executive, Medical, and Legal Office Administration programs who have completed 30 credit hours. The Cooperative Education program allows advanced students to go out into the business world and participate in paid employment directly related to their major field of study. Students will attend seminar sessions on campus in addition to a minimum of ten hours per week of practical field observation and on-the-job experience in area companies approved by the Coopera-

OFFICE ADMINISTRATION

tive Education Office and the Office Administration Department. A faculty coordinator will meet routinely with each student to review work completed. PREREQUISITE: 30 credit hours completed and department approval.

Offered Fall Semester

BZ 495 — OFFICE ADMINISTRATION INTERNSHIP

3 credits

This course is designed for students in the Executive, Legal, and Medical Office Administration programs who have completed 45 credit hours. The internship program allows advanced students to go out into the business world and participate in on-the-job training activities directly related to their major field of study. Students will attend seminar sessions on campus in addition to a minimum of ten hours per week of practical field observation. A faculty coordinator will meet routinely with each student to review work completed. PREREQUISITE: 45 credit hours for degree students, QPA 2.5.

Offered Spring Semester

BZ 497 — OFFICE ADMINISTRATION COOPERATIVE EDUCATION

3 credits

This course is designed for students in the Executive, Medical, and Legal Office Administration program who have completed 45 credit hours. The Cooperative Education program allows advanced students to go into the business world and participate in paid employment directly related to the major field of study. Students will attend seminar sessions on campus in addition to a minimum of 10 hours per week of practical field observation and on-the-job experience in area companies approved by the Cooperative Education Office and the Office Administration department. A faculty coordinator will meet routinely with each student to review work completed. PREREQUISITE: 45 credit hours for degree students and 15 credit hours for certificate students, and department approval.

Offered Spring Semester

Philosophy

LX 110 — PHILOSOPHY 1

Philosophy is part of the study of the self; the search for reasons for our values and beliefs; and for good reasons for our reasons. The course includes a critical examination of the traditional questions in ethics, politics, religion and art. PREREQUISITES: None.

LX 210 — PHILOSOPHY 2

3 credits

This course will examine in greater detail some of the classical problems along with some contemporary problems introduced in Philosophy 1. Students will be required to write one critical essay and one annotated bibliography on assigned readings. This course will feature guest lectures by members of other departments of STCC and outside participants. PREREQUISITE: None.

Physical Therapist Assistant

AP 100 — PHYSICAL THERAPIST ASSISTANT 1

4 credits

This course provides a survey of Physical Therapy and the role of the assistant. Professional ethics and responsibilities are discussed. Emphasis is on the performance of basic skills used by the Physical Therapist Assistant. These include lifting and transfers, patient mobility, bed-making of the occupied bed, ambulation training, range of motion, vital signs, aseptic procedures, bandaging, use of the tilt table, and mechanical traction. Clinical visits will be included for initial patient contact.

Offered Fall Semester

AP 200 — KINESIOLOGY

4 credits

This course is designed to develop an understanding of the dynamics of human motion through the study of muscles and joints. **PREREQUISITE:** Anatomy & Physiology 1 (MB 132).

Offered Spring Semester

AP 201 — PHYSICAL THERAPIST ASSISTANT 2

4 credits

This course provides lecture and laboratory work in the study of the various modalities and in physical therapy and the physiological effects of these modalities. Principles and practice of massage techniques and chest physical therapy are also included in the course content. **PREREQUISITE:** AP 100.

Offered Spring Semester

AP 300 — PATHOLOGICAL CONDITIONS

3 credits

This course presents the tissue changes resulting from traumas, disease, and degenerative processes. The course acquaints the student with the orthopedic, neurological, and general medical/surgical conditions encountered in treating patients. **PREREQUISITES:** MB 132, MB 232, AP 100, AP 200, AP 201.

Offered Fall Semester

AP 301 — PHYSICAL THERAPIST ASSISTANT 3

4 credits

This course provides the opportunity to study the mechanical and physiological concepts of exercise problems with emphasis on the problems related to the patient's motor involvement. Laboratory experience is provided to develop the skill of the student in application of various exercise equipment. Practicum and clinical observation will be included. **PREREQUISITES:** AP 100, AP 200, AP 201. Honors component available.

Offered Fall Semester

AP 302 — MUSCLE TESTING

1 credit

This is an introductory course in the manual testing of the gross strength of the major muscle groups of the human body. **PREREQUISITE:** AP 200.

Offered Fall Semester

AP 402 — PHYSICAL THERAPIST ASSISTANT SEMINAR

1 credit

The purpose of these seminars is to correlate the academic and technical courses with the practical clinical work. They are alternately scheduled with the affiliation assignments so that students may return to the classroom for sharing and discussion.

Offered Spring Semester

AP 403, AP 404 — SUPERVISED CLINICAL EXPERIENCE

6 credits

each Supervised practice in selected clinical settings. **PREREQUISITES:** All other courses must be completed by the end of the third semester.

Offered Spring Semester

Physics

MP 090 — BASIC PHYSICAL SCIENCE

4 credits

Introduction to physical science, using very frequent experiments and simple arithmetic. Emphasis on development of the student's confidence, initiative, and self-reliance. Includes volume by water displacement; weight changes in reactions; freezing and boiling points; densities of solids, liquids and gases; solubilities. Constant proportions from electrolysis of water and from synthesis of a salt. Atoms and molecules; spectra; radioactivity. **PREREQUISITE:** None. The course serves as preparation for other college science courses and is suitable for students who have taken no previous science.

Offered Fall and Spring Semesters

PHYSICS

MP 119 — TECHNICAL PHYSICS

4 credits

An overview of physics in one semester, intended primarily for students in Technology programs. Mechanics topics include vectors, statics, linear and circular motion, work and energy. Electric fields and circuits, waves, light, and atomic physics are also treated. Experimentation and problem-solving are stressed. Includes three laboratory hours each week. PREREQUISITE: MM 101 (Trigonometry).

Offered Fall and Spring Semesters

MP 120 — TECHNICAL PHYSICS FOR ELECTRONICS

4 credits

This is a course on mechanics, energy, electricity, magnetism and light. Lectures, demonstrations, problem assignments and laboratory work are given in the areas of: motion, energy, conservation, electromagnetic induction, EM radiation and optics. This course includes a three-hour laboratory. PREREQUISITE: MM 101 (Trigonometry).

Offered Fall Semester

MP 125 — PHYSICAL SCIENCE

4 credits

This is a science course for non-science majors, including topics in physics, chemistry, astronomy, and earth science. It uses a qualitative/descriptive approach to natural phenomena utilizing only basic math skills. This course includes a three-hour laboratory. PREREQUISITE: MM 073.

Offered Spring Semester

MP 130 — COLLEGE PHYSICS 1

4 credits

A non-calculus, college level physics course for liberal arts transfer students or students of the life sciences. Topics include motion, mass, force, conservation laws, momentum, gravitation, work, energy, and heat. The problems and laboratory are designed with biological applications. There is a three-hour laboratory per week. PREREQUISITE: MM 093 (Algebra).

Offered Fall Semester

MP 132 — UNIVERSITY PHYSICS 1

4 credits

This course, intended for engineering and science majors, uses calculus extensively. It is the first of a sequence of three rigorous courses in classical mechanics, covering statics, the laws of motion, energy, momentum, conservation laws, oscillators, and waves. Includes a three-hour laboratory and one-hour recitation each week. PREREQUISITE: MM 155; COREQUISITE: MM 255.

Offered Spring Semester

MP 230 — COLLEGE PHYSICS 2

4 credits

A continuation of College Physics 1, this is a non-calculus, college-level physics course for liberal arts transfer students and students in pre-med or life sciences. Topics include electrostatics, basic electronics, circuit analysis, alternating current, and optics. Atomic physics, nuclear physics, and radioactivity are introduced. Includes a three-hour laboratory. PREREQUISITE: MM 093 or MM 097; RECOMMENDED: MP 130.

Offered Spring Semester

MP 232 — UNIVERSITY PHYSICS 2

4 credits

This course is a continuation of MP 132. Topics include: electrostatics, electrical circuits, magnetism, interaction of magnetic fields and currents, and magnetic induction. Maxwell's laws will be introduced. This course demands a command of calculus, vector algebra, and vector analysis. This course includes a three-hour laboratory and one hour of recitation each week. PREREQUISITE: MP 132, MM 255; COREQUISITE: MM 355.

Offered Fall Semester

MP 255 — PHOTOGRAPHIC SCIENCE

3 credits

Photography is the permanent recording of images through the action of light and chemistry. In this course we will take a close look at this phenomenon; we will study its theories, examine its materials, and discuss its measurement. Among the sub-topics to be covered are photographic history, chemistry, mathematics, densitometry, sensitometry, light, and color. The course will be organized as two weekly lectures with a weekly laboratory session. The aim of this course is to provide students with a firm foundation and understanding of the photographic process. **PREREQUISITE:** MM 083.

Offered Fall Semester

MP 300 — RADIOLOGIC PHYSICS 1

4 credits

This course is a basic atomic physics course emphasizing the medical application of photon ionizing radiation. Topics covered are basic mechanics, basic electrostatics, and fundamentals of electronics. Special topics include: the nature of the photon, ionizing radiation, with emphasis on attenuation processes. The photoelectric effect, Compton effect, pair production, secondary radiation resulting from such, and x-ray spectra are covered in detail. Use of a scientific calculator is required. Two-hour laboratory with extensive graphing exercises. Transferable science course for non-science majors. **PREREQUISITE:** MM 093 Required of departments AX, AY, AZ; open to all students **RECOMMENDED:** MM 101

Offered Fall Semester

MP 332 — UNIVERSITY PHYSICS 3

4 credits

This is a continuation of MP 232. Topics include: Maxwell's equations, electromagnetic waves, oscillators, physical and geometrical optics, concepts of special relativity, Bohr model of the atom, introduction to the Schrodinger equation, wave functions and probability amplitudes. Includes a three-hour laboratory and one-hour recitation each week. **PREREQUISITE:** MP 232 and MM 355 (Calculus 3).

Offered Spring Semester

MP 351 — COMPLEX ANALYSIS

4 credits

This course covers the essential background needed in different fields of science and engineering. Topics covered include analytic functions, singularities of analytic functions, Cauchy Riemann relations, conformal mappings, complex path integration, poles, residues, and cuts. **PREREQUISITES:** Calculus 1 and Calculus 2.

Offered Fall and Spring Semesters

MP 400 — NUCLEAR PHYSICS

4 credits

This course, which is a continuation of MP 300, is a basic nuclear physics course emphasizing the medical applications of radiation. The nuclear properties of the atom are covered, describing energy levels of stable and unstable nuclei, which then are related to radioactive decay (gamma, beta, alpha, fission). Production of photons and particles from reactors, cyclotrons, linacs, and x-ray machines is covered with emphasis on medical applications. Radiation detection instrumentation and radiation dosimetry as prescribed by the NRC are covered. Topics and problem sets include: RBE, LET, HVL, half-life, NRC regulations. Use of a scientific calculator is required and will include problems relating to the natural logarithm. This is a transferable science course for non-science majors. **PREREQUISITE:** MM 093; **RECOMMENDED:** MM 101. Required of AY, AZ; open to all students.

Offered Spring Semester

MP 150 — INDEPENDENT STUDY PHYSICS 1

1, 2, 3, or 4 credits

Independent study or laboratory project in physics under direction of instructor. Student may propose project or elect to undertake a project of instructor's choice. **PREREQUISITE:** Permission of instructor.

Offered Fall/Spring/Summer Semesters

PHYSICS

MP 250 — INDEPENDENT STUDY PHYSICS 2

1, 2, 3, or 4 credits

A continuation of MP 150. **PREREQUISITE:** Permission of instructor.

Offered Fall/Spring/Summer Semesters

Political Science

NI 100 — AMERICAN GOVERNMENT AND POLITICS

3 credits

An analysis of the way in which politics and political institutions work in American society. The major problems of American democracy are explored, with their political, social, and economic implications. Also explored are constitutional rights and freedoms, the federal power structure, and changing governmental institutions. **PREREQUISITE:** None.

Offered Fall Semester

NI 300 — POLITICAL THEORY 1: FROM PLATO TO HOBBS

3 credits

This course is a survey and comparative analysis of the political writings of various thinkers from classical antiquity to the 1600s. The course will also examine key concepts of normative political theory, such as power, ideology, and the state, and their relationship to the perennial problems of the social order.

NI 330 — POLITICAL THEORY 2: 1600 TO THE PRESENT

3 credits

This course is a survey and comparative analysis of the political writings of various thinkers from 1600 to the present. The course will examine such political constructs as nationalism, anarchism, democratic socialism and Marxism, conservatism, and fascism.

Offered Spring Semester

NI 900 — DIRECTED STUDY IN POLITICAL SCIENCE

Variable credits

Semester hour credit will vary from one to three, depending upon the written, agreed-upon approved, student-professor contracts.

Psychology

NP 100 — GENERAL PSYCHOLOGY

3 credits

This introductory course identifies those scientific methods used to study human behavior. Discussion centers around the contribution of heredity, environment, learning, perception, motivation and emotion in shaping our individual personalities. Honors component available.

Offered Fall and Spring Semesters

NP 101, 102, 103 — GENERAL PSYCHOLOGY MODULES

3 credits

This three-credit independent study course is divided into three one-credit modules, and offers an independent, flex-time approach to mastering an introductory, college-level discipline. In this course, the student will cover all the same topics presented in STCC's other General Psychology courses, and will use the same text. The testing of a student's comprehension will include an extensive computer-generated test for each chapter with essay questions, as well as comprehensive examination for each module.

A student may be accepted into NP 101, 102 and 103 (one credit per module) during Registration or Pre-Registration; however, under special circumstances a student may register after a semester is underway.

NP 101 — GENERAL PSYCHOLOGY — MODULE 1

1 credit

This module covers general perspectives, careers, scientific study of behavior, states of consciousness, learning by classical and operant conditioning, and memory.

NP 102 — GENERAL PSYCHOLOGY — MODULE 2

1 credit

This module includes language theory and development, concept formation, problem solving, and intelligence. It examines motivation and psychological development. **PREREQUISITE:** NP 101.

NP 103 — GENERAL PSYCHOLOGY — MODULE 3

1 credit

This module explores personality theory and measurement, stress and adjustment, and social psychology. **PREREQUISITE:** NP 102.

NP 109 — HUMAN RELATIONS

3 credits

This is a course designed to build a strong self image. Each student has an opportunity to understand that he/she is a functioning human being in the twentieth century and that this is not a task to be taken lightly. He/she will realize that we are all similar in many ways and that we are also different. This course will help the student establish a philosophy of life that will be very helpful in his/her communications and awareness of the future.

Offered Fall and Spring Semesters

NP 305 — CHILD PSYCHOLOGY

3 credits

This advanced course examines the major influences on a child's physical, cognitive, and social development from conception through early childhood. Information is presented in chronological order to give an integrated view of the child at each major phase of development. An examination of the basic theories and contemporary research suggest some answers for more effective parenting. **PREREQUISITE:** NP 100.

Offered Fall Semester

NP 325 — LIFESPAN HUMAN GROWTH AND DEVELOPMENT

3 credits

This course will emphasize the cognitive, biological, psychosocial, sexual, cultural, and moral development of the individual from conception through old age. The theories of Freud, Erickson, Piaget, Kohlberg, Kubler-Ross, and other prominent psychologists will be applied to specific problems in the developmental process.

Offered Spring Semester

NP 350 — ADOLESCENT PSYCHOLOGY

3 credits

This advanced course examines the major influences on a person's physical, cognitive and social development from middle childhood through adolescence. An examination of the basic theories and contemporary research is presented for each major phase in order to give an integrated view of development in humans during this time of their lives. **PREREQUISITE:** NP 100.

Offered Spring Semester

NP 400 — PRINCIPLES OF NORMAL/ABNORMAL BEHAVIOR

3 credits

A general introduction into the origin, development, degrees of mental disorganization, and the methods of coping with psychological dysfunction. Inquiry will also be made into the theoretical and applied approaches of several of the major schools of thought with regard to helping services. **PREREQUISITE:** NP 100.

Offered Fall and Spring Semesters

NP 406 — PSYCHOLOGICAL ASSESSMENT OF CRIME

3 credits

This course analyzes the types of people that commit crimes, and presents a psychological profile of the criminal offender. Emphasis is placed on the following criminal situations: arson, rape, terrorism, murder, and political assassination.

NP 900 — DIRECTED STUDY IN PSYCHOLOGY

Variable credits

Semester hour credit will vary from one to three, depending upon the written, agreed-upon, approved, student-professor contract.

Radiation Therapy Technology

AY 104 — INTRODUCTION TO RADIATION ONCOLOGY

3 credits

This course begins with an orientation to the profession followed by a discussion of cancer detection, pathology, and disease management, comparing various treatment modalities. Students are introduced to the biological effects of radiation and to the modes of radiation therapy, including a comparative study of external beam units. Students are introduced to quality assurance procedures as they apply to radiation therapy. Restricted to AY.

AY 208 — PRACTICUM

5 credits

The 10-week summer practicum courses provide maximum opportunities for students to develop their clinical skills. Students spend 30 hours per week in clinical affiliations, supplemented by some afternoon classes on campus. These include discussion of practical treatment planning and topics in brachytherapy and quality assurance. Students will be tested periodically on the classroom content, and the grade for the summer will reflect both the clinical and classroom components.

AY 209 — DOSIMETRY AND TREATMENT PLANNING

4 credits

This course covers the fundamentals of clinical dosimetry and treatment planning, beginning with a discussion of dosage in radiation therapy, progressing to pre-treatment procedures and to the principles of treatment planning. Consideration is given to a wide range of therapy techniques and modalities, brachytherapy as well as teletherapy; and students develop facility with dose/time calculations. PREREQUISITE: AY 104. Restricted to AY.

AY 304 — CLINICAL ONCOLOGY 1

3 credits

This course includes an examination of oncologic pathology and treatment principles, followed by an investigation of cancer of various body sites and systems. Discussion includes etiology, and epidemiology, pathology, staging, symptoms, treatment, prognosis and patient care for each site under consideration, with special emphasis on the role of radiation in cancer management and its relationship to other treatment modalities. PREREQUISITES: MB 232, AY 209; Restricted to AY. Honors component available.

Offered Fall Semester

AY 303 — RADIOGRAPHIC IMAGING OF HUMAN STRUCTURE

1 credit

This course will provide fundamentals of radiographic exposure techniques, latent image formation, processing of radiographs, and the opportunity to examine human structure as it appears through medical imaging. The course is designed for non-radiographers.

AY 407 — PRACTICUM

5 credits

The 10-week summer practicum courses provide maximum opportunities for students to develop their clinical skills. Students spend 30 hours per week in clinical affiliations, supplemented by some afternoon classes on campus. These include guest lectures, and review sessions for reinforcement and integration of prior learning. Students will be tested periodically on the review content, and the grade for the summer will reflect both the clinical and classroom components. Restricted to AY.

AY 409 — CLINICAL ONCOLOGY 2

3 credits

This course concludes the discussion of the etiology, epidemiology, pathology, staging, symptoms, treatment, and prognosis of cancer with respect to body sites and systems. PREREQUISITE: AY 304. Restricted to AY. Honors component available.

Offered Spring Semester

AY 103, AY 207, AY 301, AY 401 — PRACTICUM

2, 3, 5, 5 credits

Supervised clinical experience is provided in the Radiation Therapy Department of an affiliated hospital under the direction of certified radiation therapists. Clinical training will be provided on a range of treatment machines, in treatment simulation, and in computerized treatment planning. Half-semester rotations are required in the Physics Department. Restricted to AY.

Radiography

AX 001 — CLINICAL ORIENTATION 1

No credit

This course provides an introduction to the affiliate, the affiliate policies and procedures, and the affiliate Radiology Department. The course is designed to assure the affiliated hospital that the students will not compromise their high standards of health care. Clinical Orientation 1 is a prerequisite for Clinical Practicum 1 (AX 213). Restricted to AX.

*Offered Winter Intersession Only***AX 111 — RADIOGRAPHIC POSITIONING 1**

4 credits

This course provides the basis of performing anatomic positioning. Anatomic positioning is the "art" of radiography. The final product, the radiograph, is dependent upon proper anatomic positioning, as well as the proper technical factors. The ultimate purpose of all positioning is to visualize specific parts of the body, free from superimposition of anatomic structures. This course will include development of psychomotor skills in the application of ionizing radiation to produce diagnostic radiographs of the appendicular skeleton. PREREQUISITES: LE 095, MM 093 or their equivalent. Concurrent AA 101, AA 210, MB 132, AX 112, AX 114. Restricted to AX.

*Offered Fall Semester***AX 112 — IMAGE PRODUCTION AND EVALUATION**

2 credits

An introduction to the basic imaging techniques including an examination of the recording media used, i.e., film, tape, selenium plates and TV. Manual and automatic processing is covered along with intensifying screens, and the characteristics of the image, density, contrast, detail, and distortion. PREREQUISITE: MM 093 or equivalent. Concurrent MB 132, AX 111, AA 101, AA 210, AX 114. Restricted to AX.

*Offered Fall Semester***AX 114 — RADIATION PROTECTION**

1 credit

The nature of ionizing radiation and its biological effect on the human are discussed. The NCR and Commonwealth of Massachusetts rules and regulations relating to radiation protection and monitoring of personnel and patient protection are presented to the level where the student understands risk versus benefit of medical radiation. Radiation detection equipment and instrumentation for clinical and emergency situations are covered. The human radiobiological response is covered. Open to other students by permission of instructor. PREREQUISITE: Algebra 2. Restricted to AX, AY, AZ.

*Offered Fall Semester***AX 115 — INTRODUCTION TO RADIOGRAPHY**

1 credit

This introductory course will deal with the essentials for patient/technologist interaction. The relationship between clinical education and the theory component of the R.T. curriculum as well as defining the clinical competency evaluation system are covered. Students will learn definition of terms, titles of organizations, and abbreviation/phrases used in a radiography department. They will also discuss personal obligations which radiographers have to their patients and their profession, and what is meant by professional confidentiality as well as effective communication techniques. The class will

RADIOGRAPHY

cover the impact of medical malpractice on society and patient consent rights, as well as the role a radiographer should take to prevent a lawsuit against him or herself and the hospital. Restricted to AX.

Offered Fall Semester

AX 211 — RADIOGRAPHIC POSITIONING 2

4 credits

This course is a continuation of AX 111, Positioning 1. It deals with the anatomic positioning of the spine and the ribs. Also, assisting the Radiologist in contrast instillation during exams of the urinary system, gastrointestinal, and biliary tracts. PREREQUISITES: AX 111, AX 112, MB 132, AA 101, AA 210. Restricted to AX.

Offered Spring Semester

AX 212 — EQUIPMENT OPERATION AND MAINTENANCE

2 credits

Sequential to AX 112- an in-depth examination of the equipment used in radiography, starting with the x-ray tube and the rectifying circuit, tube ratings, and the cooling charts for multiple exposures, photo timing, image intensification, stereography, and tomography. Problem solving for different grids is covered. PREREQUISITE: AX 112. Restricted to AX.

Offered Spring Semester

AX 213, 214, 313, 415, 416 — CLINICAL PRACTICUM

1, 2, 3, 4, AND 5

2, 5, 3, 3, 5 credits

These courses provide a structured clinical experience to assist the student in the application of didactic and laboratory practice in clinical settings, under the supervision of registered technologists. This experience includes an examination of the student's competence, and a continuing evaluation of his professionalism. Clinical Orientation 1 and 2 are required prior to Clinical Practicum 1 and 4, respectively. Successful completion of each course is required to progress to the next practicum. NOTE: Clinical orientation is offered during the Winter Intersession only. Restricted to AX.

Offered Spring, Summer, Fall, Spring, Summer Semesters

AX 311 — SPECIAL PROCEDURES IN RADIOGRAPHY

2 credits

A highly-trained team of professionals is necessary to successfully execute the techniques required to obtain diagnostic information during a special procedure. Special procedures are commonly employed to visualize the vascular system or similar hollow organs or vessels. This course will deal with the procedures, the equipment utilized, and the preparation and performance of the procedures. PREREQUISITES: MB 232, AX 111, AX 211. CONCURRENT AX 313, AX 314. Restricted to AX.

Offered Fall Semester

AX 314 — RADIOGRAPHIC POSITIONING 3

3 credits

This course is a continuation of AX 211, Positioning 2. It deals with the positioning of the cranium and special views (projections) of the anatomic structures in AX 111 and AX 211. The major emphasis will be placed on the various positions of the cranium. PREREQUISITES: AX 211, MB 232. Restricted to AX.

Offered Fall Semester

AX 411 — RADIOLOGIC PATHOLOGY

1 credit

This course will provide the student with an introduction to the concepts of disease. The recognition of gross pathology and its relevance to modifying radiographic procedures. PREREQUISITES: AX 314, AX 212, AX 213, and AX 311. Restricted to AX.

Offered Spring Semester

AX 412 — ANCILLARY THEORY AND PROCEDURES

1 credit

A detailed examination of those aspects of radiology not normally included in a structured curriculum. Included will be: computerized axial tomography, nuclear magnetic resonance, (MRI), digital radiography, advanced calibration, sonography, nuclear medicine, therapy, etc. **PREREQUISITES:** AX 212, AX 311, AX 411, AX 314. Restricted to AX.

Offered Spring Semester

AX 413 — SEMINAR/QUALITY CONTROL

3 credits

This course will provide the procedures followed in a quality control program, and will examine the benefits of such a program to the radiology department. Also, a review of the entire curriculum of the program, including film critique, will be provided. **PREREQUISITES:** AX 311, and AX 314. Restricted to AX.

Offered Spring Semester

AX 414 — RADIATION BIOLOGY

1 credit

This course includes a detailed examination of the effects of radiation on the cell, the systems, and the human being, including both long-term and short-term effects, somatic and genetic effects. **PREREQUISITES:** MB 132, MB 232, and AX 114. Restricted to AX, AY, AZ.

Offered Spring Semester

AX 417 — ADVANCED RADIATION PROTECTION

1 credit

This five-week module is a continuation of AX 114. Topics covered include radioactivity and problem solving relating to half-value layer, and attenuation. Calculations on person and time spent in radiation areas will be covered thoroughly. Dosimetry will begin with RBE, LET, f-factors, and will cover NRC and NCRP requirements on MPDs, recordkeeping, and monitoring. Time, distance, and shielding are emphasized throughout the course. **PREREQUISITES:** MM 093, MP 300, AX 114. Concurrent with AY 414. Restricted to AX.

Offered Spring Semester

Respiratory Care

AR 104 — INTRODUCTION TO RESPIRATORY CARE

3 credits

This introductory course includes a study of cardiopulmonary anatomy/physiology, arterial blood gas interpretation, introduction to cardiopulmonary disease, medical terminology, and ethics. The course is designed to provide the student with fundamental knowledge and theory which will enable the student to understand the more complex theories and practice of respiratory care in subsequent courses.

Offered Fall Semester

AR 105 — RESPIRATORY CARE 1

4 credits

This course is designed to be a study of respiratory care equipment and the physical principles involved in its use. Among areas to be discussed are: oxygen transport, gas physics, medical gas therapy, gas analyzing equipment, CPR, basic airways, and bedside measurement and monitoring devices. The didactic portion consists primarily of lectures, and the clinical hours provide for application of principles learned in the classroom.

Offered Fall Semester

AR 205 — RESPIRATORY CARE 2

4 credits

This is the second part of a two-semester course which integrates physical principles with their application to clinical equipment. Application of physical assessment, infection control, hyperinflation therapy, postural drainage therapy and suctioning airways

RESPIRATORY CARE

will be discussed. The didactic portion consists primarily of lectures, and the clinical hours provide for application of principles learned in the classroom. PREREQUISITES: AR 104, AR 105, MB 132, MB 140.

Offered Spring Semester

AR 206 — RESPIRATORY CARE 3

3 credits

This course is an extensive study of general applications, contraindications, and hazards of pharmacological agents, aerosol and humidification therapy used in the treatment of cardiopulmonary diseases. Calculation of dosages and mechanical means of application of medication will be covered. PREREQUISITES: AR 104, AR 105, MB 132, MB 140.

Offered Spring Semester

AR 213 — RESPIRATORY CARE 4

6 credits

A study of the principles and theories of chest physiotherapy. An examination of rehabilitation techniques and respiratory care home care. The didactic portion consists primarily of lectures, and the clinical hours provide for application of principles learned in the classroom. PREREQUISITES: AR 104, AR 105, MB 132, MB 140, AR 205, AR 206, MB 232, MB 121.

Offered Summer Session

AR 303 — INTENSIVE RESPIRATORY CARE

3 credits

An in-depth study of the principles of continuous mechanical ventilation and arterial block gases interpretation. Theory/application of mechanical ventilation and arterial block gases will be discussed in detail. PREREQUISITE: AR 104, AR 105, MB 132, MB 140, AR 205, AR 206, MB 232, MB 212, AR 213.

Offered Fall Semester

AR 305 — PULMONARY FUNCTION TESTING

3 credits

This course will examine in detail equipment, diagnostic testing, interpretation, and the patterns of various respiratory diseases. Students learn how to use equipment in various pulmonary function labs. PREREQUISITES: AR 104, AR 105, MB 132, MB 140, AR 205, AR 206, MB 232, AR 213.

Offered Fall Semester

AR 306 — RESPIRATORY CARE APPLICATION/CLINICAL SCIENCES 1

2 credits

This course is offered over two semesters, and encompasses physiology of the cardiovascular and pulmonary systems, and physiology designed to prepare the student for clinical judgment in respiratory care. Topics related to respiratory function, acid-base balance, and ventilation and perfusion relationship are included. PREREQUISITES: AR 104, AR 105, MB 132, MB 140, AR 205, AR 206, MB 232, AR 213.

Offered Fall Semester

AR 307 — RESPIRATORY CARE 5

6 credits

An extensive study of the principles and theories of current trends in airway care management, physical assessment, chest radiology, laboratory tests, and electrolytes. Equipment and current trends in these areas will be examined. The didactic portion consists primarily of lectures, and the clinical hours provide application of principles learned in the classroom. PREREQUISITES: AR 104, AR 105, MB 132, MB 140, AR 205, AR 206, MB 232, AR 213.

Offered Fall Semester

AR 405 — RESPIRATORY CARE PRACTICUM

3 credits

The clinical, bedside, and laboratory application of respiratory care is presented, utilizing the facilities of affiliated clinical sites and College laboratory under supervision of hospital respiratory care practitioners, physicians, and College faculty. Clinical affiliation is designed to expose students to an environment in which they can practice respiratory care. PREREQUISITES: AR 104, AR 105, MB 132, MB 140, AR 205, AR 206, MB 232, MB 121, AR 213, AR 303, AR 305, AR 306, AR 307.

Offered Spring Semester

AR 406 — RESPIRATORY CARE APPLICATION AND CLINICAL SCIENCES 2

4 credits

This is the second part of a two-semester course encompassing pulmonary pathology. Special emphasis is placed on the etiology, pathophysiology, and treatment of pulmonary diseases. The didactic portion consists primarily of lectures and the clinical hours provide for application of principles learned in the classroom. PREREQUISITES: AR 104, AR 105, MB 132, AR 205, AR 206, MB 232, MB 121, AR 213, AR 303, AR 305, AR 306, AR 307.

Offered Spring Semester

AR 408 — RESPIRATORY CARE 6

3 credits

This course is a study in hemodynamic monitoring, electrocardiography, and preparation for the NBRC advanced practitioner exam. Students will learn how to take the RRT simulation exam. The final exam will be self-assessment exam (NBRC Registry exams), written and simulation. PREREQUISITES: AR 104, AR 105, MB 132, AR 205, AR 206, MB 232, MB 121, AR 213, AR 303, AR 305, AR 306, AR 307.

Offered Spring Semester

AR 409 — NEONATAL/PEDIATRIC CARE

3 credits

This course offers the foundation of neonatal and pediatric respiratory care, from anatomic and physiologic development of the cardiopulmonary system to various disease states. The course will focus on etiology, pathophysiology, diagnosis, treatment, and prevention for each disease state. Evaluation of the neonatal and pediatric patient will include history, physical and clinical assessments as well as radiologic evaluations. PREREQUISITES: AR 104, AR 105, MB 132, MB 140, AR 205, AR 206, MB 232, MB 121, AR 213, AR 306, AR 303, AR 305, AR 307.

Offered Spring Semester

**Small Business Management Option
(See Business Administration)**

**Social Sciences
(See Economics, History,
Sociology/Anthropology,
Psychology and Education,
Political Science)**

Sociology/ Anthropology

NS 100 — INTRODUCTION TO SOCIOLOGY

3 credits

An introductory course designed to acquaint the student with a working knowledge of the concepts used by sociologists and with the well-established generalizations in the field. Topics to be studied include socialization, culture, population, group processes and social stratification.

Offered Fall and Spring Semesters

NS 110 — INTRODUCTION TO ANTHROPOLOGY

3 credits

A general introduction to social and cultural anthropology which will explore among the diverse cultures of the world some of the possible variations in technology, economics, social and political organization, art, religion and ideology. Each year the world grows smaller in each area of communication, transportation, and general economic interdependence. However, an understanding of cultural differences among the people of the world is often lacking. Cultural anthropology provides a systematic description and comparison of the ways of life of groups of people throughout the world. An appreciation of the solutions to human problems developed by other cultures allows not only greater perception of our own way of life, but also of the values and goals of others. The fundamental objective of this course is to provide insight into various ways that people respond to basic human needs.

Offered Fall and Spring Semesters

NS 160 — MULTICULTURAL/MULTIETHNIC U.S.A.

3 credits

This interdisciplinary course is designed to assist students in understanding the rich and vast cultural and historical contributions of the diverse ethnic groups and subgroups that have contributed to the American experience and continue to influence it. Students learn to appreciate and take pride first in their own ethnic and cultural/ familial backgrounds, and then study selected ethnic groups prevalent in the community. The dangers of stereotyping and generalizations are discussed in order to understand and prevent the problems of racism, prejudice, and discrimination. Terms and concepts such as the melting pot, cultural pluralism, cultural blindness, cultural imposition, ethnocentrism, classism, sexism, ageism, multiculturalism, ethnicity, global competency, and global interdependence are discussed in class in an effort to share with the students a vision of a truly American dream — a multicultural/multiethnic USA. **PREREQUISITE:** NS 100; LE 100 strongly recommended.

Offered Fall and Spring Semesters

NS 200 — SOCIAL PROBLEMS

3 credits

This course applies the principles and concepts of sociology to selected aspects of contemporary American society, such as the areas of poverty, crime, urban change, population, alcoholism, role definitions, minority group relations and drug addiction. **PREREQUISITES:** NS 100 or NS 110.

Offered Fall and Spring Semesters

NS 250 — SOCIOLOGY OF THE FAMILY

3 credits

The course will focus on the historical development and change of the family, its structure and functions and its relationship to the other major institutions of society. Although the primary focal point will be the American family, cross-culture comparison will be used especially in the study of marriage and kinship practices. Strong emphasis will also be placed on family change and the family as a social problem including such topics as the single parent, changing sex roles and communes. **PREREQUISITES:** NS 100 or NS 110. **Not offered every year.**

Offered Fall and Spring Semesters

STUDENT DEVELOPMENT

NS 300 — SOCIOLOGY OF AGING

3 credits

This course examines aging as a social phenomenon in the United States. Topics include social factors in the aging process, statistical distribution and ecological conditions of aging, and economics, public policy and politics as they relate to old age. **PREREQUISITE:** NS 100 or NS 110. **Not offered every year.**

Offered Fall and Spring Semesters

NS 900 — DIRECTED STUDY IN SOCIOLOGY/ANTHROPOLOGY

Variable credits

Semester hour credit will vary from one to three, depending upon the written, agreed-upon approved, student-professor contract.

Spanish (See Foreign Languages)

Student Development

ND 080 — INTRODUCTION TO CAREER PLANNING

1 credit

In this course, students discover their interests, values, needs, and learning styles as they relate to occupational choices. Decision-making strategies to identify possible career options and how to set realistic goals are also discussed. **PREREQUISITE:** None.

ND 099 — FRESHMAN SEMINAR

3 credits

The methodology used in this course represents a combination of teacher-prepared lectures, with student-centered, highly-participatory small and large group discussions. Using the text *Master Student* as a guide, students will engage in writing activities, quizzes, homework assignments and oral reports. In addition, videos and guest lectures will supplement and enhance the text. As a result of this course, the student will develop an understanding of institutional procedures, utilize basic study skill techniques, explore personal/social concerns, and develop career information and planning skills.

Offered Fall and Spring Semesters

ND 122,123,124 — CAREER PLANNING MODULES

This three (3) credit course is divided into one-credit modules. This course will help students to assess their strengths, interests, and values, and to examine their lifestyle.

ND 122 — SELF-ASSESSMENT — MODULE 1

1 credit

This module involves understanding of who you are and what is important to you. Course projects include: career assessment inventories, values clarification, and personal assessment.

ND 123 — CAREER EXPLORATION — MODULE 2

1 credit

This module involves identifying some key interest; you are now ready to explore the world around you. Course projects include: guest speakers, informational interviews, and access to resources for job market investigation.

ND 124 — CAREER DECISION — MODULE 3

1 credit

This module involves making career decisions. Students will develop effective job campaign strategies which include: resume writing, applications/cover letters, and practicing interviewing on videotape.

Offered Fall and Spring Semesters

STUDENT DEVELOPMENT

ND 126,127 — STUDY SKILLS SEMINAR

2 credits

This course, consisting of two modules of five weeks each, is designed to increase student success in college through exposure to efficient study techniques, personal learning styles, and available campus resources. Through lecture, discussion, films, tapes, tours, and self-appraisal inventories, students will learn more about themselves: short and long range goals, self-motivation, anxiety reduction, planning and prioritizing time, study/test-taking skills. Students will also become familiar with the available resources, services, and procedures of the College. A student may register for one or both of the modules during the registration period. A student may register for ND 127 up to five weeks into the semester.

Offered Fall and Spring Semesters

ND 126 — STUDY SKILLS SEMINAR — MODULE 1

1 credit

This module covers self-assessment, study habits and skills, time management and planning, scholastic motivation, learning styles, note-taking, thinking skills, and institutional resources at STCC.

ND 127 — STUDY SKILLS SEMINAR — MODULE 2

1 credit

This module covers preparing for taking tests, memory and learning, library resources, term papers and writing skills, assertiveness to improve communication skills, self-confidence, anxiety and stress, and relaxation techniques.

ND 135 — INTRODUCTION TO CAREER PLANNING/JOB SEARCH PROCESS

3 credits

This course is designed to instruct students who are disabled in the career planning process, assist them in identifying their strengths and abilities, prepare them for the job search process, and make them adept in resume preparation and the interview process. **PREREQUISITE:** In order for a student to enroll in this course, he or she must have completed 15 semester hours at STCC and consider him or herself to have a disability.

ND 136 — JOB SEEKING STRATEGIES

2 credits

This course focuses on implementing career decisions by developing skills necessary to conduct a productive job search, write resumes and cover letters, fill out job application forms, and interview effectively. Additional topics include legal requirements, disclosure issues, and workplace accommodations.

Surgical Technology

AO 101 — INTRODUCTION TO SURGICAL TECHNOLOGY

4 credits

An introduction to surgical technology, selected aspects of the history of surgery and hospitals, terminology, sterilization, asepsis, universal precautions, and preparation of goods for sterilization are presented in class and simulated laboratory. Perioperative routines including understanding a health history; risk factors; informed consent; patients' rights; physical diagnosis skills; and scrubbing, gowning, and gloving are topics covered this semester. Field observations are planned in surgical processing departments in hospitals.

Offered Fall Semester every other year

AO 201 — SURGICAL TECHNOLOGY 2

5 credits

Fundamentals of surgical patient care essential to the work in the surgical suite are presented in class, laboratory, and field experience in hospitals. Selected topics included are wound healing, environmental design and safety, care of specimens, preparing and functioning in a sterile field, instrument classification and recognition, needle and suture classification, draping, complications of surgery, legal responsibili-

TELECOMMUNICATIONS TECHNOLOGY

ties, and skill acquisition in gowning and gloving. Roles of team members in the operating room are highlighted. Practice for skill acquisition, and in setting up for, carrying out and breaking up a surgical case is the focus of the campus laboratory and hospital experience. PREREQUISITES: AO 101, MB 132.

Offered Spring Semester every other year

AO 304 — SURGICAL TECHNOLOGY 3

9 credits

The knowledge, skills and professional behavior of a surgical technologist are developed in this course, which combines common health problems requiring surgical intervention, surgical procedures, interoperative complications, instrumentation supplies, aseptic and special techniques, etc. Surgery of the abdomen, genitourinary, operative obstetrics, gynecological surgery, cancer (breast) surgery, and interoperative medications are some of the topics presented. Clinical practicums are planned in the operating room and central processing service with direct supervision. Clinical is 20 hours per week. PREREQUISITE: AO 101, AO 201, MB 132, MB 232, LE 100, LE 200, and AA 111-112.

Offered Fall Semester

AO 403 — ROLE OF THE SURGICAL TECHNOLOGIST

2 credits

Leadership dimensions of the surgical technologist as a technical professional are developed in this course. State-of-the-art issues and practice concerns emerging into the work world, job seeking strategies, assuring quality and competency, and professional leadership are some topics discussed. Students will prepare a clinical paper and presentation as well as a resume. PREREQUISITE: Completion of semesters 1-3. May be taken in last semester only.

Offered Spring Semester

AO 404-405 — SURGICAL TECHNOLOGY 4

10 credits

A continuation of AO 304 with common health problems and surgical procedures in additional surgical specialties, i.e., orthopedic, thoracic, vascular, reconstructive plastic eye, and others. Clinical experience in the operating room provides an opportunity to develop skill in the full spectrum of the work. Planning for and carrying out cases independently as first and second "scrub", first assistant, circulator, and the overall work of the surgical services is expected. Clinical work will weave into class for discussion and information of state-of-the-art practice. Opportunity for an elective experience may be possible. Clinical is 24 hours per week. PREREQUISITE: Completion of semesters 1-3.

Offered Spring Semester

Telecommunications Technology

GT 111 — INTRODUCTION TO TELEVISION WRITING

4 credits

Students develop a working foundation in writing for television, with a strong emphasis on news. Students are taught the traditional script cues for directors, how to write for live, still picture, and for video. How does television writing differ from compositional writing? What are journalistic ethics? What are some of the challenges that newsrooms face today? Due to the amount of writing necessary for the course, students are required to complete LD 099 before enrolling in the course. PREREQUISITE: LD 099.

Offered Fall Semester

GT 120 — VIDEO TECHNIQUES

3 credits

An intensive introduction to the techniques of operating professional video equipment for the production of video programs. Class sessions use chalkboard lectures, videtaped examples, equipment demonstrations, multimedia presentation, and ex-

TELECOMMUNICATIONS TECHNOLOGY

tensive practice with the instructor in the studios and edit rooms. Students are coached to become skilled and accurate in their use of the video tools upon which their advanced classes and the video profession depend. **PREREQUISITE:** None.

Offered Fall Semester

GT 130 — VIDEO PRODUCTION

3 credits

Class meetings concentrate on industry-standard procedures for production of video programs, emphasizing pre-planning, operational tactics, crew teamwork, and efficiency in use of time and effort. During the first part of the semester each student plans and completes a short video piece which requires using basic techniques of camera work, live video switching, recording, narration writing, picture and sound editing, and fitting narration over cut picture (all covered in GT 120). Later in the semester, student production crews are formed, with each crew producing a mini-documentary show on a topic of their choice, following a format which is studio-anchored with extensive field shooting inserted. **CONCURRENT:** GT 120.

Offered Fall Semester

GT 140 — INTRODUCTION TO MASS COMMUNICATION

3 credits

This course familiarizes the student with the definitions of communication, the important role of the mass media in shaping our culture as well as the sophisticated mass media communications vehicles. The wide spectrum of communications — from the evolution of various media, to the impact on today's society, is explored. This includes programming philosophies/practices, image shaping, the First Amendment, information gathering, the world view of citizens, and what influence the media has on politics or politics on the media. Due to the amount of writing and research, students are required to complete LD 099 before enrolling in the course. **PREREQUISITE:** LD 099.

Offered Fall Semester

GT 210 — ADVANCED TELEVISION WRITING

3 credits

Having mastered the basics in the introductory course, this course focuses on script writing for production including news, public affairs, and corporate programming. As with the prerequisite, writing comprises most of this course. **PREREQUISITE:** GT 111.

Offered Spring Semester

GT 220 — TV PRODUCING AND DIRECTING

3 credits

Develops skills used in producing and directing dramatic scenes, which are increasingly used by institutions and corporations for training and motivational purposes. Classes concentrate on the standard devices and production procedures used in staging, taping, and editing dramatic scenes containing rehearsed dialog, editorially constructed action, closeups, and reaction shots. In the studio portion of the class, student crews are assigned scenes to stage and shoot which include fictitious dialog and action details. Emphasized are the classic methods of staging and shooting overlapping camera coverage to provide material needed later in the editing process. **PREREQUISITES:** GT 120, 130.

Offered Spring Semester

GT 230 — SPEAKING ON TELEVISION

3 credits

Essentially a speech course, but geared to television presentation. The student is introduced to various speaking techniques utilizing vocal and overall relaxation exercises, breathing control, and proper usage of the English language. In addition, the student learns how to communicate to an audience through the camera, and proper, professional on-camera behavior.

Offered Spring Semester

GT 240 — MASS MEDIA THEORY AND EFFECTS

3 credits

Case study analysis comprises a large part of media theory. What are the overall effects of the various media on society? How does society react? What impact did H.G. Wells' "War of the Worlds" broadcast have on the listening public in 1938? Could it happen again? By examining previously produced media (books, audio/videotapes), students will offer their insights on society's reaction.

*Offered Spring Semester***GT 310 — INFORMATIONAL VIDEO DESIGN**

3 credits

This course examines the nature of impressions, messages, and confusions generated in the audience's minds while viewing a video presentation. Audience reactions are then traced to the particular design of the video at the point when the reaction was generated. By this method, better design skills may be developed. Analysis of television commercials and the research behind their designs is used as a further guide to students working on their own productions in this course, such as promotionals, training tapes, announcements, and news show package. Advanced techniques in electronic graphics and multiple-image effects are also studied. In the studio portion of the class, students design and produce several short video pieces for showing on the campus cable network (CCN). **PREREQUISITES:** GT 120, 130, 210, 220. Honors component available for 3 students.

*Offered Fall Semester***GT 322 — TELEVISION JOURNALISM**

3 credits

Broadcast writing proficiency, production, and reporting are stressed, along with an examination of what news is, and what determination is made for story coverage. Through this course, students learn to compile information and collate, unearth evidence and appraise it, budget their time and energy, and develop an appreciation for accuracy. Students will also develop the ability to produce a full news program.

*Offered Fall Semester***GT 331 — TV PRODUCTION PRACTICUM**

2 credits

Designed to provide students an exposure to professional settings, this course is taken on-site at a local cable, broadcast, medical, educational, or industrial video production facility. Activities will be determined by the on-site supervisor according to the current needs of the practicum institution. The equivalent of 6 hours per week of the semester is served on a schedule agreed to by the student and the site supervisor.

*Offered Fall Semester***GT 411 — INFORMATIONAL VIDEO PRODUCTION**

3 credits

Features study and practice working with A/B roll effects, SMPTE time code, multiple passes through the switcher, 2-D graphics, and technical quality control methods used in the analog domain. In addition, the course explores the increasing use of computer systems to manipulate digital video by use of sophisticated software such as Adobe Premier. Students are then guided in the production of video programs which they have designed to be showcases of their abilities after 3 semesters in the major. This work should be suitable for cablecasting on the campus cable network (CCN) and for portfolio use in applying to four-year colleges or for jobs in the industry. **PREREQUISITES:** GT 120, 130, 210, 220, 310.

Offered Spring Semester

TELECOMMUNICATIONS TECHNOLOGY

GT 422 — TELEVISION NEWS PRODUCTION

3 credits

Through a combination of classroom/studio laboratory time, students receive more hands-on advanced editorial techniques, further development of news production, and news informational programming. This course primarily focuses on combining the skills students have learned while in this department. This class is responsible for producing a live, closed circuit weekly newscast.

Offered Spring Semester

GT 431 — TELEVISION PRODUCTION PRACTICUM 2

2 credits

Under this course number, students may continue their original practicum for a semester, change to a different practicum, or begin a practicum. See course description for GT 331.

Offered Spring Semester

GT 440 — ELECTRONIC MEDIA SYSTEMS

3 credits

A dynamic overview of the electronic mass communications industry, with an emphasis on the central role of cable. Interactions of competing technologies, economics, and consumer markets are explored, with a view to how media corporations organize themselves for maximizing their markets. Major topics are: traditional TV broadcasting networks and their affiliates, the rise of coax cable based on broadcast TV's limitations, use of C-band satellites, USSB and DirecTV, cable system franchising, program production and syndication, signal compression, fiber optics, telephone company entries into video, progress on the information highway, and the Advanced Digital Television system standards for North American television. PREREQUISITE: None.

Offered Spring Semester

Word Processing Management (See Office Administration)

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Catherine Wilder Labine
Wilbraham

Peter Nessen
NCN Financial Corporation
Boston

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Acting Secretary of Education
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Student Member

Edward T. Sullivan, Jr.
Business Manager, Local 254
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Boston

Dr. Robert V. Antonucci
Commissioner
Department of Education
Malden
(Ex Officio, Non-Voting)

Administrative Directory

Administrative Offices

President	Andrew M. Scibelli	16/233	3841
Exec. Vice President/Academic Affairs	John H. Dunn	16/223	3845
Vice Pres., Administration/CFO	Cheryl Groeneveld	16/205	3802
Vice Pres., Economic & Business Devel.	Thomas E. Holland	15/1st	3863
Vice Pres., Enroll. Mgmt./Student Aff.	Ray M. Di Pasquale	16/Adm.	3176
Vice Pres., Grants & Development	Gail E. Carberry	16/331	3842
Dean of Student Services	William M. Manzi	27/2nd	3454
Assistant to the President	James J. Dowd	16/231	3819
Asst. Vice Pres., Human Resources	Myra D. Smith	16/245	3833
Director of Computer Services	L. Douglas Walter	2/103	3350
Staff Asst./Sec. to the President	Gladys S. Hardy	16/233	3841

Deans of Academic Divisions

Business	Donald Bready	2/215	3324
Engineering Technologies	John R. Warner	17/205	3501
General Studies/Developmental Education	Teresa Burr	27/206	3477
Health/Human Services	Mary E. O'Leary	20/202	3609
Humanities	Jewel Rentzschke	13/104	3655
Math, Sciences & Engineering	Jack Barocas	17/315	3322
Nursing	Eileen Neville	20/303	3505
Social Sciences	Carol Roberts	17/329	3351

Academic Affairs

Asst. Vice Pres., Academic Affairs	Richard C. Parkin	16/337	3460
Director, Academic Computing	Robert Baraldi	2/237	3348
Director, AHEC	Helen Caulton	16/326	3899
Director, Bilingual Services	Beatrice Szlajen	16/148	3482
Director, Cont. Educ. Oper./Veterans Aff.	David Sarrette	15/1st	3869
Director, Student Support Services	Raymond Blair	27/218	3896
Director, Institutional Research	Lucie K. Lewis	16/317	3832
Director, Library Services	Tamson M. Ely	27/101	3302
Director, Special Academic Projects	Georgena Van Strat	16/324	3876
Director, Academic Advising	Dionna Doss	17/243	3352
Reference Librarian	Barbara Wurtzel	27/121	3478
Audiovisual Librarian	Lynn Kleindienst	27/121	3484
Cataloger	Lynn Eaton	27/107	3486
Director of Media Services	Martin Benson	17/210	3158
Tech Prep Coordinator	Celeste Comeau	16/331	3160
Occupational Education Liaison	Patricia Crosby	16/335	3427

Administrative Services

Assistant Vice Pres., Admin.	Tim Braim	16/203	3806
Director, Security & Safety	Francis Perusse	7	3800
Director, Facilities	Victor T. Focosi	16/203	3301

Computer Services

Associate Director, Campus Network	Mark Curto	2/103	3915
Assistant Director, Admin. Computing	Ann Pandolfi	2/101	3377

Economic and Business Development

Asst. Vice Pres., Economic & Bus. Dev.	Mary Breeding	15/1st	3865
Director, Conferences and Seminars	Ann Dunphy	15/1st	3824

Enrollment Management Services/Public Relations

Asst. Vice Pres., Enroll. Mgmt./Admissions	Patrick Tigue	16 Adm.	3822
Director, Athletics	J. Vincent Grassetti	2/G07	3929
Director, Coop. Educ./Career Place/Transfer	Louisa Davis	27/265	3807
Director, Financial Aid	Joel A. Friedman	16/285	3813
Director, Health Services	Patricia Burke	16/105	3510
Director, Publications/Media Relations	Setta A. McCabe	16/247	3830
Director, Student Activities	Michael Van Dyke	8	3828
Director, Women's Center	Jane Sweeney	20/100	3723
Registrar	Elaine Goulas	15/1st	3857
Coordinator of Disabled Student Services/ADA	Mary A. Moriarty	27/2nd	3827
Associate Director, Financial Aid	Marilyn Sutin	16/285	3818
Associate Director, Financial Aid	Mary Forni	16/285	3817
Assistant Director, Admissions/Minority Enroll.	Myrna Rivera-Sablak	16/Adm.	3175
Admissions Counselor	Christina Tigue	16/Adm.	3776

Grants and Development

Asst. Vice Pres., Grants and Development	J. Stanley Cummings	16/331	3880
Executive Director, Foundation/Alumni	Beverly D. Simonds	16/3rd	3873

Department Chairs/Program Coordinators

Art	Edith Wiles	28/211	3754
Automotive Technology	Raymond Sbriscia	20/200	3757
Biological Sciences	Nancy Rapoport	02/529	3644
Biomedical Instrumentation Technology	Kenneth Dupont	20/522	3508
Biotechnology	Nancy Rapoport	02/529	3644
Business Administration	Robert Rodgers	02/219	3341
Chemistry	Elsa Cressotti-Bugbee	17/331	3345
Civil Engineering Technology	W. Lee Tuthill	17/343	3380
Clinical Laboratory Science	Joanne Cerrato	20/352	3516
Computer Information Systems	Lillian Beauchemin	02/212A	3329
Computer Systems Engineering Technology	G. Mullett/G. Snyder	17/635,631 3435/3433	
Computer Science Transfer	W. White/J. Zagarins	17/309/305 3333/3332	
Cosmetology	Marilyn Rovelli	20/416	3503
Court Reporting	Beverly McCarthy	02/214A	3545
Dental Assistant	Carol Giaquinto	20/203	3633
Dental Hygiene	Denise Ryan	20/242	3504
Developmental English	David Winsper	13/217	3674
Diagnostic Medical Sonography	Michael Foss	20/207	3502
Drafting Technology	Otto Paradzick	17/213	3752
Early Childhood Education	Sally Curtis	13/318	3658
Economics	Siegfried Rentzschke	17/239	3964
Electrical/Robotics Technology	Richard Sturtevant	20/121	3959
Electronic Systems Engineering Technology	G. Mullett/G. Snyder	17/635,631 3435/3433	
Energy Systems Technology	Robert Bujak	32/103	3761
Engineering and Science Transfer	W. White/J. Zagarins	17/309/305 3333/3332	
English	Jane Davis	13/213	3670
English as a Second Language	Marie Greco	13/302	3682
Environmental Technology	Daniel Smola	17/203	3657
Foreign Languages	(vacant)		
Graphic Arts Technology	Raymond Fontaine	14/106	3769
History/Political Science	Cecelia Gross	17/241	3353
Landscape Design and Management Tech.	H. Alan Crowe	17/339	3357
Laser Electro-Optics Technology	G. Mullett/G. Snyder	17/635, 631 3435/3433	
Law Enforcement/Criminal Justice	Bert Scannapieco	17/225	3325
Liberal Arts Transfer	Mary Donovan	17/219	3327
Mathematics	Richard Burns	17/412	3372
Mechanical Engineering Technology	Gary Masciadrelli	17/213	3752
Medical Assistant	Mary Ellen Harbeck	20/514	3551
Music	(vacant)		
Nuclear Medicine Technology	Richard Serino	20/502	3523
Occupational Therapy Assistant	Marianne Joyce	20/225	3517
Office Administration	Linda Belton	02/214	3943
Physical Therapist Assistant	Elizabeth Burke	20/320	3539
Physics	Margaret McCarthy	17/341	3358
Psychology	Edward Moriarty	17/229	3355
Radiation Therapy Technology	Julianne Kinsman	20/420	3525
Radiography	Richard Pushkin	20/424	3547
Respiratory Care	Lee Robinson	20/422	3526
Sociology/Anthropology	Mary Jane Pi-Sunyer	17/235	3346
Surgical Technology	Kathleen Flynn	20/344	3521
Telecommunications Technology	Kirk Smallman	02/718	3684

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Course descriptions are listed on pages 183-314 in alphabetical order by department (Arts and Technology through Telecommunications Technology). The indexes on the following pages will assist you in locating a specific course description.

Index of Department Codes

Each course number begins with the 2-letter prefix which is the department code. This index lists the department codes in alphabetical order.

Index of Course Subjects

If you know you are looking for a course in a specific department, such as Graphic Arts Technology, you may use this index to find that the department code for Graphics Arts is GA, and that course descriptions for that department begin on page 254.

Index of Department Codes

DEPARTMENT CODE	DEPARTMENT
AA	Medical Assistant
AC	Cosmetology
AD	Dental Assistant
AF	Occupational Therapy Assistant
AH	Dental Hygiene
AL	Clinical Laboratory Science
AN	Nursing
AO	Surgical Technology
AP	Physical Therapist Assistant
AR	Respiratory Care
AS	Diagnostic Medical Sonography
AX	Radiography
AY	Radiation Therapy Technology
AZ	Nuclear Medicine Technology
BA	Accounting
BC	Court Reporting
BD	Computer Information Systems
BE	Executive Office Administration
BF	Finance
BI	Marketing
BK	Management
BL	Legal Office Administration
BM	Medical Office Administration
BO	Clerical Office Assistant
BP	General Business
BW	Word Processing Management
EB	Biomedical Instrumentation Technology
ED	Computer Systems Engineering Technology
EE	Electrical/Robotics Technology
EL	Laser Electro-Optics Technology
ET	Electronic Systems Engineering Technology

FA, FB	Mechanical Engineering Technology
GA	Graphic Arts Technology
GC	Civil Engineering Technology
GD	Drafting Technology
GL	Landscape Design and Management Technology
GT	Telecommunications Technology
HE	Environmental Technology
HP	Energy Systems Technology
IA	Automotive Technology
LD	Developmental English
LE	English
LF	Foreign Languages
LM	Music
LS	General Studies
LT	Liberal Arts Transfer/Fine Arts Option
LX	Philosophy
MB	Biological Sciences
MC	Chemistry
ME	Engineering Sciences
MK	Computer Science Transfer
MM	Mathematics
MP	Physics
NC	Early Childhood Education
ND	Student Development
NE	Economics
NH	History
NI	Political Science
NL	Law Enforcement/Criminal Justice
NP	Psychology
NS	Sociology/Anthropology
TA	Arts and Technology

Index of Course Subjects

SUBJECT	DEPARTMENT CODE	PAGE
Accounting	BA	193
Anthropology	NS	308
Art	LA	252
Arts and Technology	TA	183
Automotive Technology	IA	184
Biological Sciences	MB	186
Biomedical Instrumentation Technology	EB	192
Business Administration	BA, BB, BF	
.....	BI, BK, BP	193
Chemistry	MC	204
Civil Engineering Technology	GC	205
Clerical Office Assistant	BZ	288
Clinical Laboratory Science	AL	208
Computer-Aided Design/Computer-Aided Manufacturing	FA/FB	275
Computer Information Systems	BD	210
Computer Integrated Manufacturing	FA/FB	275
Computer Science Transfer	MK	214
Computer Systems Engineering Technology	ED	215
Cosmetology	AC	217
Court Reporting	BC	218
Criminal Justice	NL	266
Data Processing	BD	210
Dental Assistant	AD	223
Dental Hygiene	AH	225
Developmental English	LD	244
Diagnostic Medical Sonography	AS	227
Drafting Technology	FA/FB/GD	275
Early Childhood Education	NC	229
Economics	NE	231
Electrical/Robotics Technology	EE	232
Electronic Systems Engineering Technology	ET	234
Energy Systems Technology	HP	238
Engineering and Science Transfer	ME	240
Engineering Transfer	ME	240
English	LE	244
Environmental Technology	HE	249
Finance	BF	196
Fine Arts	LA	252
Foreign Languages	LF	254
General Business	BP	200
Government	NI	300
Graphic Arts Technology	GA	254
Health Careers Community	AK	258
History	NH	259
Honors Colloquia		260
Humanities (See Art, English, Foreign Languages, Music, Philosophy)		
Landscape Design and Management Technology	GL	262
Laser Electro-Optics Technology	EL	264
Law Enforcement/Criminal Justice	NL	266

Legal Office Administration	BL/BZ	288
Management	BK	198
Marketing	BI	202
Math and Natural Sciences (See Engineering Transfer, Computer Science Transfer, Biological Sciences, Chemistry, Mathematics, Physics)		
Mathematics	MM	269
Mechanical Engineering Technology	FA, FB, GD	275
Medical Assistant	AA	279
Medical Office Administration	BM/BZ	288
Microcomputer Specialist	BD	210
Music	LM	282
Natural Science (See Math & Natural Sciences)		
Nuclear Medicine Technology	AZ	283
Nursing	AN	285
Occupational Therapy Assistant	AF	287
Office Administration	BZ, BL, BM, BO	288
Philosophy	LX	296
Physical Therapist Assistant	AP	296
Physics	MP	297
Political Science	NI	300
Psychology	NP	300
Radiation Therapy Technology	AY	302
Radiography	AX	303
Respiratory Care	AR	305
Robotics Technology	EE	232
Social/Behavioral Sciences (See Economics, History, Sociology/Anthropology, Psychology, Political Science)		
Sociology/Anthropology	NS	308
Student Development	ND	309
Surgical Technology	AO	310
Telecommunications Technology	GT	311
Word Processing Management	BZ	288

Index of Course Numbers

AA 101	Medical Terminology 1	279
AA 105	Introduction to Medical Assisting	279
AA 111	Human Sexuality, Yesterday, Today and Tomorrow	279
AA 112	Living and Dying: Values and Choices	279
AA 113	Skills for Health	279
AA 114	Cardio-Pulmonary Resuscitation	279
AA 116	Principles and Practice of Phlebotomy	279
AA 201	Medical Terminology 2	280
AA 202	Medical Assistant Techniques 1	280
AA 206	Venipuncture	280
AA 207	Venipuncture With Affiliation	280
AA 209	Interdisciplinary Health Team Roles and Responsibilities	280
AA 210	Health Science 2	280
AA 211	Health Science 3	280
AA 215	Electrocardiography	280
AA 301	Introduction to Human Disease	281
AA 305	Medical Assistant Techniques 2	281
AA 306	Laboratory Procedures for Medical Assistants	281
AA 319	Dosage and Calculations	281
AA 320	Pharmacology	281
AA 324	Pharmacology for the Responsible Person	281
AA 403	Medical Assistant Techniques 3	282
AA 450	Medical Records	282
AA 451	Medical Coding 1	282
AA 452	Medical Coding 2	282
AC 112	The Professional Cosmetologist	217
AC 113	Cosmetology 1	217
AC 115	Aesthetics	217
AC 213	Cosmetology 2	217
AC 214	Aesthetics 2	217
AC 215	Cosmetology 3	218
AD 100	Dental Assisting Techniques 1	223
AD 102	Oral Anatomy	223
AD 103	Dental Radiology 1	223
AD 104	Dental Materials 1	224
AD 105	Dental Sciences 1	224
AD 200	Dental Assisting Techniques	224
AD 201	Dental Sciences 2	224
AD 202	Dental Records	224
AD 203	Dental Radiology 2	225
AD 204	Clinical Affiliation	225
AF 100	Occupational Therapy Assistant 1	287
AF 200	Occupational Therapy Assistant 2	287
AF 201	Physical Pathology	287
AF 300	Occupational Therapy Assistant 3	287
AF 301	Psychosocial Pathology	287
AF 302	Occupational Therapy Media	287
AF 303	Principles of Occupational Therapy Management	288
AF 400	Occupational Therapy Assistant Seminar	288
AF 401	Occupational Therapy Assistant Practicum 1	288
AF 402	Occupational Therapy Assistant Practicum 2	288
AH 101	Clinical Practice 1	225
AH 103	Oral Anatomy 1	225
AH 104	Dental Radiology	225
AH 200	Nutrition	225

AH 201	Oral Pathology	225
AH 202	Clinical Practice 2	225
AH 203	Oral Anatomy 2	226
AH 300	Periodontology	226
AH 301	Dental Materials 1	226
AH 302	Pharmacology	226
AH 303	Clinical Practice 3	226
AH 400	Community Dental Health	226
AH 401	Clinical Practice 4	227
AH 402	Applied Dental Auxiliary Skills	227
AK 099, AK 099L	Health Directions Seminar 1	258
AK 104	Health Directions Practicum	259
AK 105	Health Directions Seminar 2	259
AL 101	Introduction to the Clinical Lab	208
AL 103	Safety and OSHA Guidelines	208
AL 211	Medical Microbiology 1	208
AL 220	Environmental Safety for Health Care	208
AL 300	Hematology and Coagulation	208
AL 302	Clinical Chemistry	209
AL 311	Medical Microbiology 2	209
AL 407	Basic Laboratory Procedures for the Medical Assistant	209
AL 409	Laboratory Skills in Nuclear Medicine	209
AL 410	Clinical Immunology/Immunohematology	209
AL 420	Clinical Practicum 1	209
AL 421	Clinical Practicum 2	210
AL 422	Clinical Practicum 3	210
AN 100	Primary Preventive Interventions 1A	285
AN 125	Basic Concepts: Mental Health/Mental Retardation	286
AN 126	Skills for the Health Care Provider	286
AN 201	Secondary/Tertiary Preventive Interventions 1A	286
AN 300	Secondary/Tertiary/Preventive Interventions 2A	286
AN 400	Secondary/Tertiary Preventive Interventions 3A	286
AN 410	Introduction to Nursing Management and Law	286
AO 101	Introduction to Surgical Technology	310
AO 201	Surgical Technology 2	310
AO 304	Surgical Technology 3	311
AO 403	Role of the Surgical Technologist	311
AO 404-405	Surgical Technology 4	311
AP 100	Physical Therapist Assistant 1	296
AP 200	Kinesiology	297
AP 201	Physical Therapist Assistant 2	297
AP 300	Pathological Conditions	297
AP 301	Physical Therapist Assistant 3	297
AP 302	Muscle Testing	297
AP 402	Physical Therapist Assistant Seminar	297
AP 403, AP 404	Supervised Clinical Experience	297
AR 104	Introduction to Respiratory Care	305
AR 105	Respiratory Care 1	305
AR 205	Respiratory Care 2	305
AR 206	Respiratory Care 3	306
AR 213	Respiratory Care 4	306
AR 303	Intensive Respiratory Care	306
AR 305	Pulmonary Function Testing	306
AR 306	Respiratory Care Application/Clinical Sciences 1	306
AR 307	Respiratory Care 5	306
AR 405	Respiratory Care Practicum	307
AR 406	Respiratory Care Application/Clinical Sciences 2	307

AR 408	Respiratory Care 6	307
AR 409	Neonatal/Pediatric Care	307
AS 100	Sonographic Physics and Instrumentation 1	227
AS 200	Sonographic Physics 2	227
AS 201	Sonographic Instrumentation 2	227
AS 202	Sonographic Procedures 1	228
AS 203	Clinical Practicum 1	228
AS 205	Introduction to Diagnostic Medical Imaging	228
AS 300	Sonographic Procedures 2	228
AS 301	Clinical Practicum 2	228
AS 400	Sonographic Procedures 3	228
AS 401	Clinical Practicum 3	228
AS 402	Sonographic Procedures 4	228
AS 403	Clinical Practicum 4	228
AX 001	Clinical Orientation 1	303
AX 111	Radiographic Positioning 1	303
AX 112	Image Production and Examination	303
AX 114	Radiation Protection	303
AX 115	Introduction to Radiography	303
AX 211	Radiographic Positioning 2	304
AX 212	Equipment Operation and Maintenance	304
AX 213, 214, 313, 415, 416	Clinical Practicum 1, 2, 3, 4, and 5	304
AX 311	Special Procedures in Radiography	304
AX 314	Radiographic Positioning 3	304
AX 411	Radiologic Pathology	304
AX 412	Ancillary Theory and Procedures	305
AX 413	Seminar/Quality Control	305
AX 414	Radiation Biology	305
AX 417	Advanced Radiation Protection	305
AY 104	Introduction to Radiation Oncology	302
AY 208	Practicum	302
AY 209	Dosimetry and Treatment Planning	302
AY 304	Clinical Oncology 1	302
AY 303	Radiographic Imaging of Human Structure	302
AY 407	Practicum	302
AY 409	Clinical Oncology 2	302
AY 103, AY 207, AY 301, AY 401, Practicum	303
AZ 102	Introduction to NMT	283
AZ 103	Practicum 1	284
AZ 104	Orientation to Practicum	283
AZ 207	Practicum 2	284
AZ 209	Practicum—Summer 1	284
AZ 210	Nuclear Imaging of Organs	283
AZ 211	Nuclear Cardiology	283
AZ 301	Practicum 3	285
AZ 306	Statistics and Instrumentation	284
AZ 401	Practicum 4	285
AZ 410	Practicum—Summer 2	285
AZ 414	In Vitro and Non-Imaging Studies	284
AZ 415	Independent Study	284
BA 098	Elementary Accounting	193
BA 110	Accounting 1	193
BA 113	Accounting/Financial	193
BA 210	Accounting 2	193
BA 213	Accounting/Managerial	194
BA 310	Intermediate Accounting 1	194

BA 311	Cost Accounting	194
BA 312	Managerial Accounting	194
BA 313	Intro. to Federal Income Taxes	194
BA 314	Small Business Planning & Control	195
BA 410	Intermediate Accounting 2	195
BA 417	Governmental and Fund Accounting	195
BA 418	Auditing	195
BB 110	Introduction to the Law	197
BB 310	Business Law 1	197
BB 311	Basic Legal Concepts	197
BB 410	Business Law 2	197
BB 412	Small Business Law and Insurance	197
BB 413	Real Estate Law	197
BC 070	Machine Shorthand Skill Building 1	218
BC 090	Machine Shorthand Skill Building 2	218
BC 101	Machine Shorthand 1	218
BC 105	Court Reporting Editing	218
BC 106	Computer-Assisted Machine Shorthand 1	219
BC 201	Machine Shorthand 2	219
BC 206	Computer-Assisted Machine Shorthand 2	219
BC 301	Court Reporting StenEd Medical Terminology	219
BC 304	Machine Shorthand 3	219
BC 305	Court Reporting Legal Shorthand Terminology	219
BC 306	Computer-Assisted Machine Shorthand 3	220
BC 310	Introduction to Realtime	220
BC 314	Court Reporting Computer Transcription Applications 1	220
BC 315	Court Reporting Transcription and Procedures 1	220
BC 400	Machine Shorthand Applications 1	220
BC 404	Machine Shorthand 4	221
BC 405	Court Reporting Medical Dictation/Transcription	221
BC 413	Court Reporting Technology/Internship	221
BC 414	Court Reporting Computer Transcription Applications 2	221
BC 415	Court Reporting Transcription and Procedures 2	221
BC 500	Machine Shorthand Applications 2	222
BC 501	Machine Shorthand 5	222
BC 505	Honors Machine Shorthand	222
BC 510	Honors CAT Applications	222
BC 600	Machine Shorthand Applications 3	223
BC 605	RPR Machine Shorthand	223
BD 101	Computer Concepts	210
BD 102	R.P.G	210
BD 105	Pascal	210
BD 107	BASIC	210
BD 192	Computer Concepts for Allied Health	211
BD 193	Computer Concepts for Human Services	211
BD 195	Computer Concepts for Technologies	211
BD 196	Computer Concepts for the Arts and Sciences	211
BD 202	Advanced RPG	211
BD 300	Microcomputer Applications for DOS	211
BD 301	Microcomputer Applications for Windows	212
BD 302	COBOL 1	212
BD 303	C Programming	212
BD 313	Operating Systems	212
BD 314	Database Systems	212
BD 315	Advanced Spreadsheets	212
BD 320	Desktop Publishing	213
BD 322	On-Line Communications	213

BD 402	COBOL 2	213
BD 406	Object-Oriented Programming	213
BD 410	Systems Analysis & Design 2	213
BD 412	Local Area Networks	213
BF 110	Introduction to Finance	196
BF 310	Money and Banking	196
BF 313	Personal Financial Planning	196
BF 410	Investments	196
BF 411	Managerial Finance	196
BI 110	Principles of Marketing	202
BI 310	Retailing	202
BI 311	Advertising and Promotion	203
BI 312	Advertising Principles	203
BI 313	Consumerism	203
BI 410	Consumer Behavior	203
BI 411	Sales and Sales Management	203
BI 412	Merchandising	203
BK 110	Principles of Management	198
BK 112	Managerial Supervision	198
BK 113	Introduction to Management	198
BK 310	Human Resource Management	198
BK 312	Women, Management, and Leadership	198, 288
BK 410	Labor Relations	198
BK 411	Production Management	199
BK 417	Purchasing	199
BK 419	Office Management and Control	199
BK 420	Small Business Management	199
BK 421	Small Business Formation	199
BK 427	Organizational Behavior	199
BK 501	Honors Seminar in Applied Management	199
BL 305	Legal Shorthand Terminology	288
BM 303	Medical Office Practice	289
BM 304	Medical Typewriting	289
BM 305	Medical Keyboarding	289
BM 307	Medical Office Practices and Procedures	289
BM 454	Medical Machine Transcription	289
BO 103	Office Assistant Procedures	290
BO 204	Intro. to Machine Transcription	290
BP 101	Office Accounting 1	195
BP 106	Medical Assistant Recordkeeping	195, 290
BP 110	Principles of Real Estate	200
BP 111	Principles of Insurance	200
BP 112	Small Business Marketing	202
BP 115	Introduction to Business	200
BP 120	Technology, Culture, and Commerce	200
BP 311	Medical Law and Ethics	201
BP 312	Medical Law for Health Personnel	197
BP 331	Residential Appraisal	201
BP 332	Commercial & Industrial Appraisal	201
BP 333	Real Estate Investments & Financing	201
BP 334	Real Estate Management	201
BP 341	Small Business Personnel Management	201
BP 342	Small Business Practicum	201
BP 355	International Business	202
BP 450	International Marketing	202
BZ 100	Basic Keyboarding Skills	290
BZ 102	Shorthand for the Electronic Office 1	290

BZ 103	Introduction to Word Processing	290
BZ 104	Keyboarding 1	290
BZ 105	Word Processing Editing	291
BZ 107	Telephone Communications/Records Management	291
BZ 113	Records Management	291
BZ 114	AVT/MLS Typing 1	291
BZ 115	Stenoscript 1	291
BZ 200	Keyboard Skill Building	292
BZ 202	Shorthand for the Electronic Office 2	292
BZ 203	Computer Shorthand for Non-Shorthand Writers	292
BZ 204	Intermediate Keyboarding	292
BZ 205	Word Processing Concepts	292
BZ 206	Basic Word Processing Applications	292
BZ 214	AVT/MLT Typing 2	293
BZ 240	Business Calculating Machines	293
BZ 245	Micronumerics	293
BZ 251	Medical Typewriting	293
BZ 260	Medical Word Processing	293
BZ 265	Administrative Medical Assistant Procedures	293
BZ 300	Keyboard Speedbuilding and Applications	294
BZ 301	Advanced Keyboarding Applications	294
BZ 302	Shorthand Speed Building	294
BZ 304	Machine Transcription	294
BZ 306	Word Processing Technology 1 on Wang Integrated Information Systems	294
BZ 307	Administrative Office Practice and Procedures	294
BZ 397	Office Administration Cooperative Education	295
BZ 401	Advanced Keyboarding	295
BZ 402	Shorthand for the Electronic Office 3	295
BZ 406	Advanced Word Processing	295
BZ 408	Advanced Word Processing	295
BZ 416	Advanced Wang WP Plus Word Processing Applications	295
BZ 495	Office Administration Internship	296
BZ 497	Office Administration Cooperative Education	296
EB 120	Measuring Principles 1	192
EB 230	Measuring Principles 2	192
EB 310	Biomed Systems 1	192
EB 340	Digital Electronics Lab	192
EB 350	Digital Electronics	192
EB 410	Biomed Systems 2	192
EB 420	Instrumentation Project	192
EB 430	Codes, Laws and Safety	192
EB 440	Integrated Circuits	193
EB 450	Clinical Internship	193
ED 101	Basic Computer Maintenance	215
ED 241	Computer Programming	215
ED 333	Machine and Assembly Language Programming	215
ED 340	Operating Systems	215
ED 342	Embedded Controllers 1	215
ED 343	Linear Circuits	216
ED 420	Microprocessor Theory	216
ED 440	Microprocessor Interfacing	216
ED 442	Embedded Controllers 2	216
ED 444	Computer Networking	216
ED 451	Computer Peripherals	217
EE 110	Basic Electricity 1	232
EE 121	CAD for Automation	232

EE 140	Basic Programming for Microcomputers	232
EE 210	Basic Electricity 2	233
EE 241	Fundamentals of Motor Control	233
EE 320	Industrial Electronic Circuits 1	233
EE 340	Funadamentals of Robotics	233
EE 350	Programmable Motor Controls	233
EE 411	Industrial Electronics 2	234
EE 440	Solid State CRT Design	234
EE 451	Microprocessor Applications	234
EE 480	Robotics and Automated Systems	234
EL 090	Laser Safety	264
EL 320	Introduction to Lasers	264
EL 325	Laser Electronics	264
EL 330	Geometrical Optics	264
EL 335	Data Acquisition and Control	264
EL 345	Photonics	264
EL 348	Optical Communications	265
EL 350	Optical System Design	265
EL 352	Optical Test and Measurement	265
EL 412	Laser Electro-Optics Projects	265
EL 415	Laser Systems	265
EL 420	Wave Optics	265
EL 425	Industrial Laser Applications	266
EL 435	Fiber/Integrated Optics	266
EL 438	Optoelectronics	266
EL 440	Vacuum Thin Film Deposition	266
EL 442	Optical Component Fabrication and Assembly	266
ET 100	Introduction to Engineering Technologies	234
ET 110	Basic Electronics 1	234
ET 111	Introduction to CAET	235
ET 115	Electronics Lab 1	235
ET 130	Circuit Theory 1	235
ET 210	Basic Electronics 2	235
ET 215	Electronics Lab 2	235
ET 220	Active Networks 1	236
ET 225	Computer Applications	236
ET 230	Circuit Theory 2	236
ET 235	Digital Systems	236
ET 240	Automotive Electronics 1	236
ET 330	Fundamentals of Pulse & Digital Circuits	236
ET 342	Computer Systems	237
ET 343	Linear Circuits	237
ET 344	Communications Systems 1	237
ET 345	Automotive Electronics 2	237
ET 442	Linear Systems	237
ET 443	Microprocessor Architecture	238
ET 444	Communications Systems 2	238
FA 112	Machine Tool Techniques 1	275
FA 211	Machine Tool Techniques 2	275
FA 235	CNC Programming	275
FA 335	Computer-Aided Manufacturing 1 (CAM 1)	275
FA 435	Computer-Aided Manufacturing 2 (CAM 2)	275
FB 110	Production Processes	276
FB 135	Mechanical Drawing	276
FB 221	Mechanics	276
FB 224	Geometrical Dimensioning and Tolerancing	276
FB 225	Introduction to CIM	276

FB 230	CAD Level 1	276
FB 315	Computer Operating Systems	276
FB 321	Strength of Materials	277
FB 331	Statistical Process Control	277
FB 336	CAD Level 2	277
FB 415	Advanced CIM Applications	277
FB 418	Automated Systems Lab	277
FB 420	Fluid Mechanics	277
FB 430	Engineering Economy	278
FB 435	CAD Level 3	278
FB 442	Manufacturing Planning and Control	278
FB 443	CIM Applications	278
FB 465	Advanced CAD Applications	278
GA 120	Typography	254
GA 131	Introduction to Printing	255
GA 145	Introduction to the Graphic Arts Computer	255
GA 211	Basic Image Assembly	255
GA 220	Layout	255
GA 241	Desktop Publishing Typography	256
GA 321	Advanced Image Assembly	256
GA 350	Graphic Design	256
GA 360	Offset Presswork	256
GA 371	Printshop Management	256
GA 380	Chemistry of Lithography 1	257
GA 397	Graphic Arts Cooperative Education	257
GA 411	Chemistry of Lithography 2	257
GA 420	Color Reproduction Processes	257
GA 422	Prepress Imaging	257
GA 445	Computerized Graphic Design	258
GA 455	Macintosh Operating Systems	258
GA 461	Advanced Desktop Publishing	258
GA 497	Graphic Arts Cooperative Education	258
GC 105	Civil Engineering Seminar	205
GC 115	Construction Materials and Methods	206
GC 120	Architectural Design & Specifications 1	206
GC 220	Construction Estimating	206
GC 235	Hydraulics and Hydrology	206
GC 310	Surveying	206
GC 320	Soils & Foundations	206
GC 345	Statics and Strength of Materials	206
GC 410	Reinforced Concrete Analysis	207
GC 420	Construction Management	207
GC 430	Transportation Engineering	207
GC 445	Structures	207
GC 455	Civil Engineering Materials Testing	207
GD 260	Graphics Design Lab	278
GL 111	Trees in the Landscape	262
GL 120	Principles of Horticulture	262
GL 210	Presentation Techniques	262
GL 220	Turf Management	262
GL 311	Shrubs in the Landscape	262
GL 320	Landscape Practices	263
GL 330	Landscape Design 1	263
GL 350	Landscape Operations (Planting)	263
GL 410	Plant Propagation	263
GL 420	Landscape Design 2	263
GL 431	Earth Forms and Structures	263

GL 450	Entomology/Disease Control	263
GT 111	Introduction to Television Writing	311
GT 120	Video Techniques	311
GT 130	Video Production	312
GT 140	Introduction to Mass Communications	312
GT 210	Advanced TV Writing	312
GT 220	TV Producing and Directing	312
GT 230	Speaking on TV	312
GT 240	Mass Media Theory and Effects	313
GT 310	Informational Video Design	313
GT 322	TV Journalism	313
GT 331	TV Production Practicum	313
GT 411	Informational Video Production	313
GT 422	TV News Production	314
GT 431	TV Production Practicum 2	314
GT 440	Electronic Media Systems	314
HE 210	Municipal Wastewater Plant Operations 1	249
HE 230	Environmental Practicum	250
HE 315	Facilities Maintenance and Instrumentation	250
HE 321	Fundamentals of Industrial Hygiene	250
HE 325	Occupational Satety	250
HE 330	Municipal Wastewater Plant Operations 2	250
HE 340	Toxicology	250
HE 410	Water and Industrial Wastewater Treatment	251
HE 435	Safety Risk Management	251
HE 440	Hazardous Materials and Waste Management 1	251
HE 441	Hazardous Materials and Waste Management 2	251
HP 110	Theory of Controls	238
HP 120	Energy Systems Lab 1	238
HP 132	Engineering Graphics 331	238
HP 220	Combustion Control Circuits	239
HP 230	Energy Systems Lab 2	239
HP 240	Principles of Refrigeration	239
HP 320	Heating System Design	239
HP 330	Power Plant Operation 1	239
HP 340	Fundamentals of Air Conditioning	239
HP 350	Microprocessor Controls	240
HP 411	Advanced Heating System Design	240
HP 425	Building Management Systems	240
HP 430	Power Plant Operation 2	240
IA 110	Gasoline Engine Systems	184
IA 120	Driveline & Air Conditioning	184
IA 130	Introduction to Automotive Service	184
IA 210	Gasoline Engines Service	185
IA 220	Automatic Transmissions	185
IA 310	Fuel & Electric Systems	185
IA 330	Brakes & Suspension	185
IA 335	Automotive Schematic Reading	185
IA 420	Engine Diagnosis & Tune-up	185
IA 430	Advanced Automotive Systems	185
IA 432	Applied Automotive Electronics	186
LA 140	Art History: Prehistoric to Gothic	252
LA 142	Painting 1	252
LA 143	Printmaking 1	252
LA 145	Figure Drawing	252
LA 146	Design: Introduction to Art	252
LA 147	Basic Drawing	253

LA 149	Drawing Composition	253
LA 240	Art History: Renaissance and Baroque	253
LA 242	Painting 2	253
LA 243	Printmaking 2	253
LA 360	Experimental Computer Imaging 1	253
LA 441; LA 442; LA 443	Directed Study in Art	253
LA 460	Experimental Computer Imaging 2	254
LD 055	Reading 1 ESL	244
LD 080	English as a Second Language Level 1	244
LD 081	English Reading Comprehension for Bilinguals Level 1	244
LD 082	Basic Skills in Conversation Level 1	245
LD 083	English as a Second Language Level 2	245
LD 084	English Reading Comprehension for Bilinguals Level 2	245
LD 085	Basic Skills in Conversation Level 2	245
LD 086	English as a Second Language Level 3	245
LD 087	English Reading Comprehension for Bilinguals (ERCB)	245
LD 088	Basic Writing Skills 1	246
LD 089	ESL Reading	246
LD 091	Reading Level 1	246
LD 092	Reading Level 2	246
LD 093	Basic Writing Skills 2	246
LD 094	Speech for Foreign Students: ESL	246
LD 099	Review for College Writing	246
LE 100	English Composition 1	246
LE 200	English Composition 2: An Introduction to Literature	247
LE 201	Business English	247
LE 202	Technical Report Writing	247
LE 203	Fundamentals of Speech	247
LE 300	Literature of the Western World: BC to 17th Century	247
LE 301	English Literature: Anglo-Saxon to Neoclassical Periods	247
LE 302	American Literature: 1620-1860	247
LE 304	Introduction to African-American Literature	248
LE 305	Children's Literature	248
LE 308	Women in Literature	248
LE 309	Introduction to Journalism	248
LE 310-312	College Theater Workshop 1, 2, & 3	248
LE 321	Introduction to Creative Writing	248
LE 400	Literature of the Western World: 18th to 20th Centuries	249
LE 401	English Literature 2: Romanticism to Modernism	249
LE 402	American Literature: 1860-Present	249
LE 408	Women in Literature 2	249
LE 450	Stage-Craft	249
LE 900	Directed Study in English	249
LF 121	Elementary Spanish 1	254
LF 122	Conversational Spanish	254
LF 221	Elementary Spanish 2	254
LH 501	Humanities Colloquium: Arts in Action	260
LH 502	Library Research Colloquium	261
LM 130	Music Appreciation	282
LM 133	Introduction to Piano and Theory	282
LM 234	Intermediate Piano and Theory	283
LX 110	Philosophy 1	296
LX 210	Philosophy 2	296
LX 501	Humanities Colloquium: Ethics in Society	261
MB 089	Math/Science Workshop	186
MB 090	Basic Biological Science	186

MB 100	Natural History	186
MB 102	Principles of Biology 1	186
MB 104	Human Biology 1	186
MB 106	General Biology 1	187
MB 108	General Botany	187
MB 109	Biology of Man	187
MB 113	Man and His Environment	187
MB 121	Microbiology	187
MB 122	Environmental Microbiology	187
MB 127	Function and Structure of Human Systems	187
MB 132	Anatomy & Physiology 1	188
MB 133	Anatomy & Physiology/CLS	188
MB 136	Applied Physiology	188
MB 138	Human Anatomy 1	188
MB 140	Biochemistry for Health Sciences	188
MB 142	Introductory Nutrition	188
MB 143	Fundamentals of Anatomy & Physiology 1	189
MB 146	Essentials of Human Biology 1	189
MB 148	Basics of Anatomy and Physiology	189
MB 151	Introduction to Biotechnology	189
MB 202	Principles of Biology 2	189
MB 204	Human Biology 2	189
MB 206	General Biology 2	189
MB 209	Biology of Man 2	190
MB 232	Anatomy & Physiology 2	190
MB 238	Human Anatomy 2	190
MB 243	Fundamentals of Anatomy & Physiology 2	190
MB 246	Essentials of Human Biology 2	190
MB 251	Biotechnology	190
MB 310	Invertebrate Zoology	190
MB 320	Histology	190
MB 340	Sectional Anatomy	191
MB 350	Embryology	191
MB 351	Cell Biology	191
MB 360	Genetics	191
MB 410	Biological Literature: An Analysis & Interpretation	191
MR 900	Directed Study in the Biological Sciences	191
MC 090	Measurements and Calculation for the Physical Sciences	204
MC 100	College Chemistry	204
MC 101	Survey of Chemistry 1	204
MC 103	General Chemistry 1	204
MC 140	Seminars in Applied Chemistry	204
MC 201	Survey of Chemistry 2	204
MC 203	General Chemistry 2	204
MC 319	Organic Chemistry 1	205
MC 320	Organic Chemistry 1	205
MC 350	Instrumental Analysis	205
MC 355	Instrumentation for Clinical Laboratory Science	205
MC 370	Independent Chemistry Study 1	205
MC 419	Organic Chemistry 2	205
MC 420	Organic Chemistry 2	205
MC 470	Independent Chemistry Study 2	205
ME 100	Special Projects in Engineering 1	240
ME 101	Special Projects in Engineering Technology 1	241
ME 102	Special Projects in Engineering Technology 2	241
ME 106	Introduction to Computer-Aided Drafting	241
ME 108	Introduction to Computing (Pascal)	241

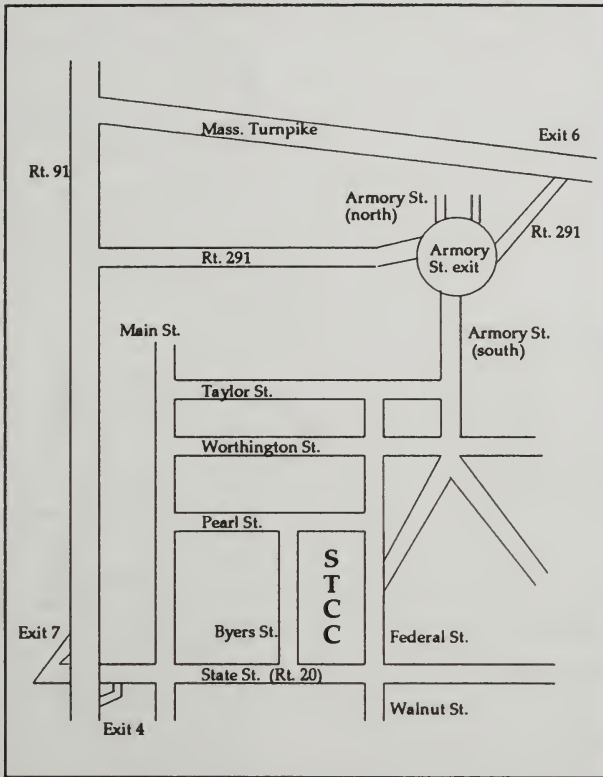
ME 109	Introduction to Engineering Graphics	241
ME 200	Special Projects in Engineering 2	241
ME 203	Computer Applications in Engineering	241
ME 204	Numerical Analysis & Computer Methods	242
ME 208	Problem Solving Using Fortran 77	242
ME 303	Introduction to Mechanical Design	242
ME 310	Mechanics 1 (Statics)	242
ME 320	Circuit Analysis 1	242
ME 322	Introduction to Digital Systems	243
ME 324	Electrical Engineering Lab 1	243
ME 330	Introduction to Materials Science and Engineering	243
ME 335	Mechanics of Materials	243
ME 340	Introduction to Chemical Engineering	243
ME 350	Engineering Thermodynamics 1	243
ME 410	Mechanics 2 (Dynamics)	243
ME 420	Circuit Analysis 2	244
ME 423	Active Networks	244
ME 427	Electrical Engineering Lab 2	244
ME 440	Chemical Engineering Thermodynamics 1	244
MG 501	Science Colloquium: From Star Gazers to Star Wars	261
MK 103	Introduction to Computer Programming	214
MK 203	The C Programming Language	214
MK 310	Machine and Assembly Language	214
MK 320	Computer Organization & Digital Logic	214
MK 401	Data Structures and Algorithms	214
MM 071	Mathematics	269
MM 072	Mathematics	269
MM 073	Mathematics	269
MM 074	Aritmética Básica Bilingüe	269
MM 075	Basic Pre-Technology Mathematics	269
MM 077	Mathematics For Nursing and Health	269
MM 078	Mathematics	269
MM 079	Mathematics	270
MM 081	Mathematics	270
MM 082	Mathematics	270
MM 083	Mathematics	270
MM 084	Algebra 1 Elemental Bilingüe	270
MM 085	Matemáticas	270
MM 086	Matemáticas	270
MM 087	Lecture Elementary Algebra 1	270
MM 091	Mathematics	270
MM 092	Mathematics	270
MM 093	Mathematics	270
MM 094	Algebra 2 Elemental Bilingüe	271
MM 097	Lecture Elementary Algebra 2	271
MM 100	Mathematics	271
MM 101	Mathematics	271
MM 102	Mathematics	271
MM 103	Mathematics	271
MM 105	Mathematics	271
MM 106	Mathematics	271
MM 108	Mathematics	271
MM 115	Mathematics for Technology 1	271
MM 116	Mathematics for Technology 2	272
MM 120	Contemporary Mathematics 1	272
MM 122	Applied Mathematics 1	272
MM 124	Mathematics for a Technical Society 1	272

MM 125	Mathematical and Algebraic Functions	272
MM 132	Technical Mathematics 1	272
MM 137	Independent Study of Mathematics	272
MM 140	Statistics & Quality Control	272
MM 142	Statistics 1	272
MM 143	Business Statistics	273
MM 155	Calculus 1	273
MM 157	Calculus for Business, Life and Social Sciences 1	273
MM 222	Applied Mathematics 2	273
MM 224	Mathematics for a Technical Society 2	273
MM 232	Technical Mathematics 2	273
MM 237	Independent Study of Mathematics	273
MM 243	Business Statistics 2	273
MM 255	Calculus 2	273
MM 257	Calculus for Business, Life and Social Sciences 2	274
MM 355	Calculus 3	274
MM 375	Discrete Mathematical Structures 1	274
MM 439	Linear Algebra	274
MM 440	Linear Algebra Laboratory	274
MM 455	Differential Equations	274
MM 475	Discrete Mathematical Structures 2	274
MN 100	Computers and Society	274
MP 090	Basic Physical Science	297
MP 119	Technical Physics	298
MP 120	Technical Physics for Electronics	298
MP 125	Physical Science	298
MP 130	College Physics 1	298
MP 132	University Physics 1	298
MP 150	Independent Study Physics 1	299
MP 230	College Physics 2	298
MP 232	University Physics 2	298
MP 250	Independent Study Physics 2	300
MP 255	Photographic Science	299
MP 300	Radiologic Physics 1	299
MP 332	University Physics 3	299
MP 351	Complex Analysis	299
MP 400	Nuclear Physics	299
NC 100	Intro. to Early Childhood Education	229
NC 110	Child Growth and Development	229
NC 120	Early Childhood Field Work 1	229
NC 200	Curriculum for Early Childhood Education	229
NC 215	Observing & Recording of Child Behavior Seminar	229
NC 220	Early Childhood Field Work 2	230
NC 250	Young Children and Books	230
NC 300	Language and Reading Instruction in Early Childhood	230
NC 325	Understanding Child Behavior Seminar	230
NC 335	Early Childhood Practicum 1	230
NC 400	Early Childhood Practicum 2	231
NC 410	Health and Safety for Infants and Children	231
NC 425	Early Childhood Program Planning	231
ND 080	Introduction to Career Planning	309
ND 099	Freshman Seminar	309
ND 122, 123, 124	Career Planning Modules	309
ND 122	Self Assessment—Module 1	309
ND 123	Career Exploration—Module 2	309
ND 124	Career Decision—Module 3	309
ND 126, 127	Study Skills Seminar	310

ND 126	Study Skills Seminar—Module 1	310
ND 127	Study Skills Seminar—Module 2	310
ND 135	Introduction to Career Planning/Job Search Process	310
ND 136	Job Seeking Strategies	310
NE 100	Principles of Economics 1	231
NE 200	Principles of Economics 2	231
NE 300	Current Economic Problems	232
NE 310	Comparative Economics Systems	232
NE 320	Development Economics Seminar	232
NG 500	Social Science Colloquium: Self and Society	261
NG 501	Social Science Colloquium: Heroes and Villains - Makers of the Modern World	261
NH 100	Survey of Early Western Civilization	259
NH 110	Survey of Early U.S. History	259
NH 200	Survey of Modern Western Civilization	259
NH 210	Survey of Modern U.S. History	259
NH 300	History of Civilization to 1650	260
NH 322	Introduction to African-American History: Colonial to 1865	260
NH 323	Introduction to African-American History: 1865 - Present	260
NH 400	History of Civilization Since 1650	260
NH 425	Women in History	260
NH 440	Chinese Civilization	260
NH 900	Directed Study in History	260
NI 100	American Government and Politics	300
NI 300	Political Theory 1: From Plato to Hobbes	300
NI 330	Political Theory 2: 1600 to the Present	300
NI 900	Directed Study in Political Science	300
NL 100	Criminal Procedures 1	266
NL 110	Introduction to Criminal Justice	267
NL 200	Criminal Procedures 2	267
NL 230	Criminal Evidence	267
NL 300	Criminal Law 1	267
NL 340	Criminal Investigation	267
NL 400	Criminal Law 2	267
NL 405	Current Issues in Law Enforcement	267
NL 411	Juvenile Procedures	268
NL 413	Parole, Probation & Rehabilitation	268
NL 415	Police/Community Relations	268
NL 450	Law Enforcement Management & Planning	268
NL 475	Law Enforcement Seminar	268
NP 100	General Psychology	300
NP 101, 102, 103	General Psychology Modules	300
NP 101	General Psychology—Module 1	300
NP 102	General Psychology—Module 2	301
NP 103	General Psychology—Module 3	301
NP 109	Human Relations	301
NP 305	Child Psychology	301
NP 325	Lifespan Human Growth and Development	301
NP 350	Adolescent Psychology	301
NP 400	Principles of Normal/Abnormal Behavior	301
NP 406	Psychological Assessment of Crime	301
NP 900	Directed Study in Psychology	301
NS 100	Introduction to Sociology	308
NS 110	Introduction to Anthropology	308
NS 160	Multicultural/Multiethnic U.S.A.	308
NS 200	Social Problems	308
NS 250	Sociology of the Family	308

NS 300	Sociology of Aging	309
NS 900	Directed Study in Sociology/Anthropology	309
TA 115	Computing in the Arts	183
TA 121	Introduction to MIDI	183
TA 122	Introduction to Sequencing	183
TA 123	Intermediate Sequencing	183
TA 215	Arts and Technology Seminar	183
TA 315	Collaboration in the Arts	183
TA 320	Electronic Music 1	184
TA 415	Arts Practicum	184
TA 420	Electronic Music 2	184
TA 470	Music Production Techniques	184

Directions to STCC



From 91 going South:

Follow Hartford signs to Exit 7, Springfield Center, exit right. Go straight through lights. At second light, turn left under highway, onto State Street.
Take State to Federal Street.

From 91 going North:

Take Exit 4, Broad Street.
Follow East Columbus Ave. to 3rd light, turn right on State Street.
Take State to Federal Street.

From Turnpike:

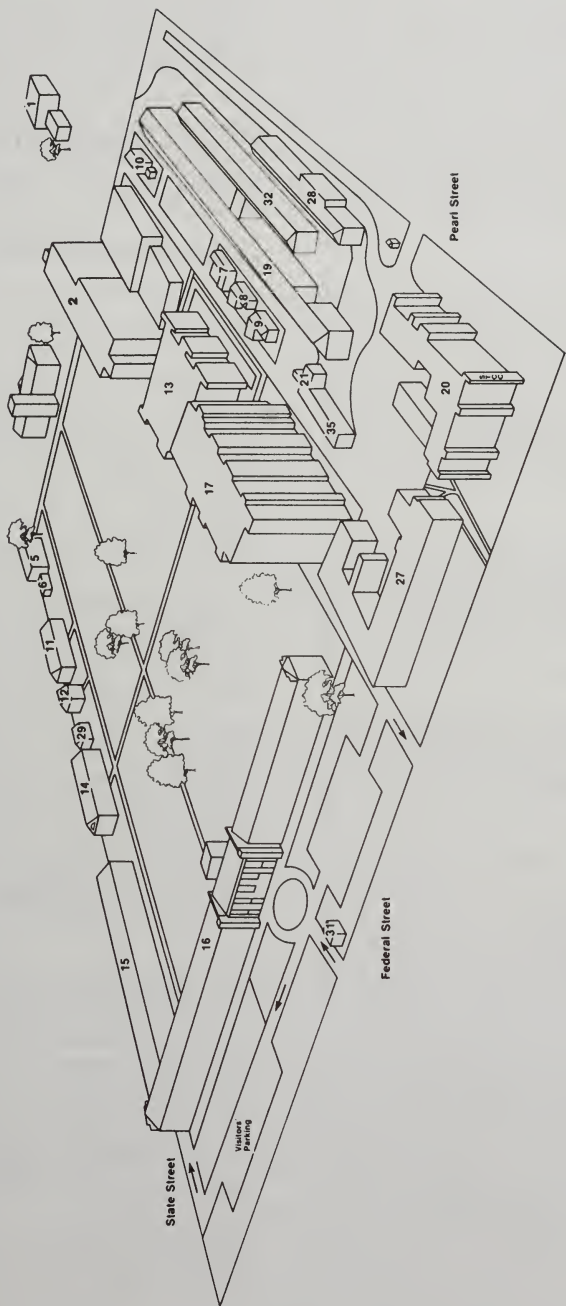
Take Exit 6.
Turn left onto Rt. 291.
Take Armory Street Exit. Go around rotary and take Armory Street going South.
Stay on Armory Street until you come to Federal Street.

Campus security officers will direct you to appropriate parking area.

Map Legend

- 1 Commanding Officer's Quarters, under jurisdiction of National Park Service
- 2 SCIBELLI HALL
 - Administrative Computer Center
 - Athletics
 - Biological Sciences
 - Biotechnology
 - Business Administration
 - Computer Information Systems
 - Conference Center
 - Court Reporting
 - Exercise Room
 - Gallery Players
 - Gallery Snack Bar
 - Greenhouse
 - Gymnasium
 - Office Administration
 - Student Computer Labs
 - Telecommunications Technology
 - Theater
 - Weight Room
- 8 Student Activities
- Student Community Council
- 5 }
6 } Under Jurisdiction
10 } of STCC
11 }
19 }
- 12 Pottery Studio
- 13 DELISO HALL
 - Developmental English
 - Early Childhood Education
 - English
 - English As a Second Language
 - Media Production Center
 - Music
- 14 Graphic Arts Technology
- 15 GARVEY HALL SOUTH
 - Cashier
 - Division of Continuing Education
 - REACH Program
 - Registrar
 - Veterans' Affairs
 - Western Massachusetts Center for Business and Technology
- 16 GARVEY HALL
 - Academic Affairs
 - Administrative Services
 - Admissions
 - Affirmative Action Office
 - Bilingual Services
 - Business Office
 - Enrollment Management
 - Financial Aid
 - Foundation
 - Health Services
 - Human Resources
 - Pioneer Valley Area Health Education Center
 - President
 - Radio Station WTCC
 - University Without Walls
 - Vending food area
- 17 PUTNAM HALL
 - Chemistry
 - Civil Engineering Technology
 - Computer Systems Engineering Technology
 - Computer Science Transfer
 - Economics
 - Electronic Systems Engineering Technology
 - Engineering and Science Transfer
 - Environmental Technology
 - History
 - Individualized Learning Center
 - Landscape Design and Management Technology
 - Laser Electro-Optics Technology
 - Law Enforcement/Criminal Justice
 - Liberal Arts Transfer
 - Mathematics
 - Physics
 - Psychology
 - Ram Office
 - Sociology and Anthropology
- 20 ALLIED HEALTH BUILDING
 - Armory Square Day Care
 - Cafeteria
 - Biomedical Instrumentation Tech.
 - Clinical Laboratory Science
 - Cosmetology/Cosmetology Management
 - Dental Assistant
 - Dental Hygiene
 - Diagnostic Medical Sonography
 - Electrical/Robotics Technology
 - Medical Assistant
 - Nuclear Medicine Technology
 - Nursing
 - Occupational Therapy Assistant
 - Physical Therapist Assistant
 - Radiation Therapy Technology
 - Radiography
 - Respiratory Care
 - Surgical Technology
 - Women's Center
- 21 Plant Growth Room
- 25 Automotive Technology
- 27 Art Gallery
 - Bookstore
 - Career Services
 - Cooperative Education
 - Counseling Center
 - Disability Services
 - General Studies
 - Library
 - Storekeeper and Maintenance Shops
 - Student Services
 - Transfer Affairs
- 28 Art
 - Mechanical Engineering Technology
- 31 Gatehouse
- 32 Energy Systems Technology
- 35 Civil Engineering Lab
 - Plant Science Lab

Campus Map



General Index

	Page		Page
ADA Statement	367	Immunization Law	16
Academic Calendar	4	Insurance	21
Academic Honesty Policy	55	International Student Information	15
Academic Information	31	Internship	37
Academic Year	39	Interviews (Admissions)	15
Academic Standing	40		
Accreditation	10	Library	51
Administrative Directory	318		
Admission	14	Make-Up Examinations	42
Application Procedure (Admissions)	14	Massachusetts State No-Interest Loan	25
Application Procedure (Financial Aid)	24	Massachusetts State Scholarship	25
Art Gallery	45	Messages	52
Articulation Agreements (2+2)	18	Mid-Semester Grades	42
Athletics	45	Mission of the College	8
Auditing of Classes	43		
Awards	44	New England Regional Student Program	22
		Nondiscrimination Statement	367
Bilingual Program	38		
Books and Supplies	23	Out-of-State Student Information	15
Bookstore	45		
		Parent Plus Loan	25
CLEP Examinations	17	Part-time Faculty	334
Capital Improvement Fee	21	Parking	53
Career Counseling	47	Parking Fee	23
Career Programs	31	Payment of Bills	21
Career Services	46	Pell Grant	24
Center for Business and Technology	62	Perkins Loan	25
Certificate of Completion Programs	31	Personal Counseling	49
Certificate Programs	31	Philosophy of the College	8
Challenge Examinations	17	Pioneer Valley AHEC	19
Class Attendance	42	Placement Testing	15
Class Schedule	39	Pluralism Policy	13
Clinical Faculty	338	Prerequisites for Admission	19
Commencement Honors	44	President's Message	6
Commonwealth Transfer Compact	32	Program Changes	42
Computing Services	45		
Confidentiality of Student Records	59	ROTC	12
Cooperating Colleges of Greater Springfield	12	Racial, Ethnic, and Religious Hatred	13
Cooperative Education	37	Re-admission	17
Counseling Center	46	Registration Process	39
Course Changes	42	Repetition of Courses	43
Curricula of the College	63	Resident Status	22
		Right to Know Disclosure	367
Day Care	50		
Dean's List	43	SIGI Plus	48
Department Chairs/Program Coordinators	320	STCC Board of Trustees	316
Department/Program Changes	17	STIA Grant	25
Developmental Courses	41	Safety Disclosure	367
Developmental Education	35	Senior Citizen Exemption	21
Direct Student Loan	25	Sexual Harassment Policy	13
Disability Services	50	Student Activities	53
Disruptive Behavior	56	Student Code of Conduct	55
Division of Continuing Education	61	Student Grievance Procedure	56
Dual Enrollment	18	Student Information and Services	45
		Student Support Services Program	38
Educational Counseling	48	Student Rights and Responsibilities	54
English As a Second Language	36	Supplemental Educational Opportunity Grant	24
Examinations and Grades	39		
Faculty and Administration	321	Tech Prep	18
Financial Aid	24	Technical Standards	16
Foundation	13	Transfer Articulation Agreements	33
Fresh Start Status	17	Transfer Counseling	32
		Transfer into STCC	17
General Education	35	Transfer Programs	32
General Education Fee	21	Tuition and Fees	23
General Information	7	Tuition Refunds	22
Goals of the College	9	Tuition Waiver	25
Governance of the College	8	Tutorial Assistance Program	38
Grading Policy	42		
Graduation Requirements	34	University Without Walls	34
		University of Massachusetts, Joint Admission	34
Health Service	51		
Higher Education Coordinating Council	317	Veterans' Information	29
History of the College	7		
Honor Society	44	Withdrawal From a Course	43
Honors Certificate Program	36	Withdrawal From College	43
Honors	51	Women's Center	53
		Work-Study Program	25

Statement of Nondiscrimination

Springfield Technical Community College is an Affirmative Action/Equal Opportunity Employer, and does not discriminate on the basis of race, color, national origin, sex, sexual orientation, age, religion, or disability in its educational programs or in admission to, access to, treatment in, or employment in, its programs or activities as required by Title VI, Civil Rights Act of 1964; Title IX, Educational Amendments of 1972; and Section 504 of the Rehabilitation Act of 1973; and regulations promulgated thereunder 34 C.F.R. Part 100 (Title VI), 34 C.F.R. Part 104 (Section 504), 34 C.F.R. Part 106 (Title IX), and M.G.L. c516. All inquiries concerning application of the above should be directed to Myra Smith, Affirmative Action Officer and Title IX Coordinator; or Mary A. Moriarty, Section 504 Coordinator.

Americans with Disabilities Act

Springfield Technical Community College advises applicants, participants, and the public that it does not discriminate on the basis of disability in admission or access to, or treatment or employment in its programs, services, and activities.

STCC has designated the following person to coordinate efforts to comply with these requirements. Inquiries, requests and complaints should be directed to: Mary A. Moriarty, ADA Coordinator, STCC, One Armory Square, Building 27, Room 258, Springfield, MA, 01105. The telephone number is 781-7822, extension 3884.

Student Right to Know Disclosure

Notice is hereby given that, in accordance with the Student Right-to-Know Act (Title I of Public Law 101-542), the graduation rates of degree-seeking, full-time students are available to all current or prospective students from the Office of the Registrar, and will be provided upon request.

Campus Safety Disclosure

Notice is hereby given that, in accordance with the Student Right-to-Know Act (Title II of Public Law 101-542), the Uniform Campus Crime Report from Springfield Technical Community College is available from the College's Office of Campus Safety, and will be provided upon request.

Absence Due to Religious Beliefs

If a student's absence is due to his/her religious beliefs, then the following legislation will apply:

Any student in an educational or vocational training institution who is unable, because of his religious beliefs, to attend classes, or to participate in any examination, study, or work requirement on a particular day shall be excused from any such examination or study or work requirement that he may have missed because of such absence on any particular day, provided however, that such a makeup examination or work shall not create an unreasonable burden upon such school. No fees of any kind shall be charged by the institution for making available to the said student such opportunity. No adverse or prejudicial effects shall result to any student because of his availing himself of the provisions of this section.

— Section 28, Chapter 151C, Massachusetts General Laws

Smoke-Free Buildings

All buildings at Springfield Technical Community College are smoke-free. Designated sites for smoking are located outside all campus buildings.

Information Subject to Change

This catalog is published as a convenient source of information for prospective students and for the general public.

To allow for unforeseen developments that may occur along budgetary or other lines, the College reserves the right to add or delete courses and programs or to revise tuition, fees, and insurance requirements described herein.



SPRINGFIELD TECHNICAL COMMUNITY COLLEGE

*One Armory Square
Springfield, Massachusetts 01105*

A member of the Cooperating Colleges of Greater Springfield